DOCUMENT RESUME

ED 024 971

CG 003 036

By- Nowlis, Helen H.
Drugs on the College Campus. A Guide for College Administrators.
National Association of Student Personnel Administration, Detroit, Mich.
Spons Agency- Food and Drug Administration (DHEW), Washington, D.C.
Pub Date Dec 67
Note- 118p.
Available from- NASPA Drug Education Project, 110 Anderson Tower, Univ. of Rochester, Rochester, New York 14627, single copies free, additional copies $1.00.
EDRS Price MF-$0.50 HC-$6.00
Descriptors- Administrative Personnel, *College Administration, Colleges, *College Students, *Drug Abuse, *Narcotics, Socially Deviant Behavior

This guide to drugs on the college campus provides accurate information to help administrators and other college officials understand and cope with the use of drugs by college students. The problem is defined, and facts about drugs, and the implications and issues occasioned by their use, are presented. Information is also offered in the following areas: (a) the student and his culture, (b) drugs and the law, and (c) the response of the educational institution to student drug use. Approximately one-quarter of this guide is devoted to a simplified summary of the current basic pharmacological information about the drugs which are of major concern (including barbituates, amphetamines, marihuana, LSD, and alcohol). Included in the Appendix are a glossary, a bibliography, a list of films suitable for college students, and a comparison chart of the major substances used for mind alteration. (EK)

ED024971

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

DRUGS ON THE COLLEGE CAMPUS

A Guide for College Administrators

HELEN H. NOWLIS, Ph. D.
University of Rochester
Director, NASPA Drug Education Project

Drugs on the College Campus **ERRATA SHEET**

ED024971

P. 2, paragraph 1, *for* vary on almost *read* vary on an almost
P. 2, paragraph 4, *read* education in italics
P. 2, paragraph 5, *read* pill society in italics
P. 8, paragraph 4, *for* Fingly *read* Fingl
P. 11, paragraph 2, *for* route, and speed *read* route and speed
Pp. 84-85, in all formulas, *for* = *read* —
P. 98, #43, *for* 1964 *read* 1946

Read quotation marks around the following:

Preface, 3rd page, paragraph 5, "coauthor"
P. 9, paragraph 4 to p. 10, paragraph 1, "The problem... mind of man."[7]
P. 16, paragraph 3, "to some degree . . . time."[15]
P. 18, paragraph 1, "right to know"
P. 24, paragraph 4, "At present time . . . agents."[3]
P. 25, paragraph 1, "it won't happen to me."
P. 25, paragraph 2, "hypocrisy"
P. 25, paragraph 3, "successful"
P. 29, paragraph 1, "at least a taste . . . this stage,"
P. 29, paragraph 1, "We of the older generation . . . pain of growth."
P. 29, paragraph 1, "the cognitive stage . . . psychological growth."[7]
P. 29, paragraph 3, "Where better . . . youthful generation."[8]
P. 87, paragraph 2, "physically . . . drugs."[39]
P. 96, paragraph 1, "Salicylate poisoning . . . physicians."[58]

EC003036

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

ED024971

DRUGS ON THE COLLEGE CAMPUS

A Guide for College Administrators

HELEN H. NOWLIS, Ph. D.
University of Rochester
Director, NASPA Drug Education Project

A publication of the Drug Education Project of the
National Association of Student Personnel Administrators
under Contract FDA 67-3, Food and Drug Administration

December 1967

NASPA CENTRAL OFFICE, INTERNATIONAL INN
SUITE 405, 5440 CASS AVENUE, DETROIT, MICH. 48202

CG 003 036

ED024971

About the Author

Dr. Helen H. Nowlis was born in Cranston, R.I., and educated at Pembroke College of Brown University and later at Yale where she received her Ph. D. in psychology. In 1967 Brown awarded her an honorary Sc. D. degree. While at Yale she was associated with the Gesell Clinic of Child Development and the Institute of Human Relations. She then taught in several colleges and served as research associate at the Institute of Child Welfare of State University of Iowa before joining the faculty of the University of Rochester as professor of psychology in 1951.

While at Rochester she collaborated with her husband Dr. Vincent Nowlis, who is also professor of psychology at the university, in research studies on the effects of drugs.

In addition to her professorship, Dr. Nowlis served as associate dean and later dean of students at Rochester. During the academic year 1966–67 Dr. Nowlis was on leave to serve as Director, NASPA–FDA drug education project. Her present title at the university is research consultant on student affairs and professor of psychology.

Dr. Nowlis is the mother of three sons, two of whom are psychologists. She has participated in many professional associations and community activities connected with student affairs, mental health, and education.

The NASPA Drug Education Project

Early in the summer of 1966 the Division for Association Personnel and Services of the National Association of Student Personnel Administrators approached the Food and Drug Administration for possible support for a project to provide student personnel and other college administrators with up-to-date, accurate information which would help them understand and cope with student drug use. By September 1966, after planning by representatives from NASPA, the Food and Drug Administration, the National Institute of Mental Health and the Treasury Department, a 1-year contract between NASPA and FDA was negotiated and a project office was established at the University of Rochester.

The project undertook to hold a national workshop in November for seven 10-man teams of deans, counselors, and health directors who became the planning committees, under the chairmanship of the NASPA regional vice presidents, for seven regional conferences held between February 15 and March 15, 1967. Materials developed in the national workshop became background papers for approximately 1,400 regional conference participants. The publication of "Drugs on the College Campus" represents, in part, a synthesis of these conferences and the culmination of the present contract.

The project office has undertaken to provide consulting services for a number of professional groups and colleges planning drug education programs. Because of the demand for such services, the project will continue on a part-time basis during 1967-68 under a new contract with FDA. It will continue to provide consulting services, serve as an information exchange, develop new materials as appropriate, and endeavor to develop a panel of experts who will be available as speakers on various aspects of drugs and drug use by college students.

Preface

This book was supposed to be a handbook. Webster defines handbook as "a compact reference book on some subject, a manual; a guidebook; a book in which bets are recorded, as on horse races." About the only sense in which it corresponds with such a definition is that it is compact. When it was envisaged many months ago, it was meant to be a reference, a manual, a guide. It might have been if it had been written then. It may now have turned out to be closer to the third definition, minus the horses.

The more broadly and critically one looks at a complex problem, the more complex it seems to become. Tolerance of complexity is not one of the outstanding characteristics of the human species, especially readers. In the area of annoying problems which seem peripheral to major concerns, one looks for easy answers, for ready made solutions—a handbook. In all honesty a handbook could not be written. Differences in individuals and in institutions, basic issues involving values and value judgments—personal, social, and educational, the inherent complexity of human beings and human behavior all conspire to make one humble. The human organism as a biological system with its ability to withstand or adapt to the many indignities we impose on it is worthy of awe and respect; our lack of understanding of its complex functioning is equally awe inspiring.

In the face of this one can analyze the complexities, evaluate existing knowledge, identify areas where caution is indicated, and raise important issues. In the last analysis each individual or group of individuals must write his own handbook or guide.

There is always the danger that complexity is increased by one's involvement. The use of drugs on the college campus, at least at present, involves a relatively small number of students, despite what one reads and hears. Even this degree of involvement raises important issues and may be a prototype of many other problems. Facing it and dealing with it may illuminate those problems or serve to highlight more basic problems.

Being painfully aware of the dangers of overgeneralization, it is necessary to emphasize, and reemphasize, the fact that this discussion applies primarily to the use of drugs by college students. When this has been said it means that one special group is being discussed—and that it is largely made up of individuals highly selected on such variables as intellectual, social, economic, and educational status and background. To generalize to the population in general or to any other segment of the population without careful reexamination would violate one of the major theses of this whole discussion.

A second major thesis, that of the role of bias, whether it be conscious or unconscious, professional or personal, requires making explicit a number of facts that introduce bias even when every conscious effort is made to avoid it. Because I am a psychologist who has done research on complex human behavior, including the social, emotional and motivational reactions to a variety of drugs, because I am a college teacher and administrator, because I am a parent, and because I am a person who has made many decisions and developed many attitudes about my own use of chemical substances, I cannot pretend to be unbiased. My biases as a psychologist will be immediately apparent. That I have long since made my peace with change and frustration should be equally apparent. Above all I have tried to follow the rules of evidence. In doing so I have had to depend on experts in a variety of disciplines. Someone with other biases might have chosen different experts and certainly would have written a different book.

Despite all of the complexity and the lack of clear and definite answers, we hope that this discussion will serve to clarify some of the issues and implications raised by the use of drugs by college students.

My debt is great to many. The late Dr. James Fox of the Bureau of Drug Abuse Control and the National Institute of Mental Health supported, encouraged and, above all, gave me freedom from the beginning of the project. I am especially grateful to Dr. Jean Paul Smith of the Bureau who has participated, contributed, run interference, and put up with all kinds of nonsense, hopefully the right kind of nonsense, with great good humor.

Early in the project Dr. Jerome Levine, Dr. Jonathan Cole, Dr. Carl Anderson of the National Institute of Mental Health helped me establish contact with experts and with ongoing re-

search across the country without which I could not have functioned. They continued to help whenever called upon.

Dr. Richard Blum, Dr. Joel Fort, Dr. William McGlothlin, Dr. Kenneth Keniston, Dr. Audrey Holliday, Dr. Leo Abood, Dr. Edgar Borgatta, Dr. Richard Alpert, Mr. Paul A. Pumpian, and Mr. Donald E. Miller made valuable contributions to the initial workshop which contributed largely to the success of the whole project. I have drawn heavily on all of them. Dr. Anne Constantinople helped in every way at all stages and was always there when needed.

Dean Preston Parr and the members of his NASPA Division for Association Personnel and Services, in their unexpected role as advisory committee for the project, have contributed to, supported, and facilitated all aspects of the project. The 1,500 participants in the regional conferences have contributed more than they know.

Without concerned colleagues who have read the manuscript, criticized, and made helpful suggestions I would not have had the courage to venture into such a complex area. Dr. Harold Borgstedt, Dr. Victor Laties, Dr. Eric Smith, Dr. Jerome Levine, Dr. Anne Constantinople, Dr. Jean Paul Smith and his colleagues at the Bureau of Drug Abuse Control, Dr. Richard Blum, Dean Preston Parr, Dean Gerald Siggelkow, Dean James Kreuzer, Dean J. C. Clevenger, Dean Burns Crookston have done their best to make this a sound and helpful document. If we have failed, the responsibility is mine. To Mrs. Dorothy Holderle, I am indebted for patient care in preparing the manuscript.

My husband, colleague and coauther, Vincent Nowlis, has contributed patience, wisdom, encouragement, knowledge, and skill at every phase of the project and of the preparation of the manuscript. Without him, there would have been no "Drugs on the College Campus."

DRUGS ON THE COLLEGE CAMPUS: PART I

I. DEFINING THE PROBLEM

The current use of hallucinogenic drugs by young people is being called the biggest cop-out of all time. A great many people would concur. It could be. But, having said this to the increasing minority of students and young people who are using drugs regularly, who use them occasionally, who do not rule out the possibility that they may try them at some time, or who vigorously defend the right of those who are using drugs to do so, the dialogue is ended. To many educators and others deeply concerned with young people and their personal and social growth and development the problem is not that simple and the dialogue must continue.

The problem of drugs on the college campus is a problem of *ignorance*—lack of knowledge about the action of chemical substances on the complex, delicately balanced chemical system that is the living organism, lack of knowledge about the relationship of variations in this system to complex human behavoir, lack of knowledge about complex human behavior itself. It is a problem of the tyranny of opinion, attitude and belief in the absence of knowledge.

It is a problem of *semantics*—of trying to talk, think and act rationally in an area in which almost every term is entangled in so much myth and emotion and such a variety of implicit assumptions, beliefs, and attitudes that futile argument replaces dialogue and discussion because the participants are neither talking the same language nor proceeding from the same assumptions.

It is a problem of *communication*—among scientists in different disciplines, between scientists and layman, between parents and children, between a generation brought up before automation, television, jet travel, nuclear energy and the hydrogen bomb, megalopolis, multiversity, and the affluent society and a generation which has known no other condition.

It is a problem of *lack of understanding of scientific method* *and concepts*—lack of understanding that there are no simple relationships between cause and effect, that human behavior has multiple determinants, that there is a difference between correlation and causation, that the design and execution of experiments is open to bias, that a conclusion based on an experiment has no meaning except in terms of the design and execution of that experiment, that individuals vary on almost infinite number of dimensions and that statements about them, even at a biological level, are in terms of averages and probabilities.

It is a problem of *living and learning and growing* in an arena where change is the only constant and where the future is increasingly unpredictable.

It is a problem of *philosophy of social control* in a pluralistic society—of the individual's relationship to societal values and to these values as expressed in law.

It is a problem of education and its relationship to current societal values; a problem both of the relationship of the individual to the institution and of the institution to the needs of society.

It is a problem of a pill society which is increasingly buying the well-advertised proposition that there is a chemical solution for any problem of unpleasantness and discomfort, whether it be physical, psychological or social (from arthritis to anxiety, from indigestion to tension, from sleeplessness to lack of social and business success)—a society that spends more money on alcohol, tranquilizers, and sleeping pills than it does on education and the Great Society.

It is a problem of *increasing retreat in the face of complex difficult problems* to "blob" thinking, of insisting at the earliest possible moment that everything is all good or all bad and defining good as not bad and bad as not good.

It may be relevant to ask why this society is reacting so violently to the use of the hallucinogens when there are from 4 to 8 million alcoholics in the country, depending on one's definition of alcoholic. Why the uproar over the small minority of students using hallucinogens when self-prescribed use of stimulants and depressants is far more widespread? Why have Americans increased their consumption of cigarettes by 9 billion (from 536 billion) during the 12 months ending in June 1967, despite sobering evidence strongly suggesting a relationship between smoking and both cancer and heart disease—and even as they contribute millions to research which will help find a cure for these major causes of illness and death? Why does society actively promote the use of alcohol and nicotine while imposing severe legal penalties on the mere possession of other chemical agents? There must be reasons and they should be relevant to the problem at hand.

Why are so many of our most gifted and privileged young people defending the right of their fellow students to use drugs and why are a few of these young people making the use of drugs and the culture that surrounds them a central factor in their lives, at least temporarily? Our first impulse is to say they are sick—but who defines sick and how? Our next impulse is to say they are rebelling—against what? Or to say that they are immoral—according to what values? Miserable—why? Searching and exploring—for what?

Why do so many of us think of student drug use exclusively as a medical or legal problem and delegate responsibility for its solution to the physician, the legislator, and the law enforcement officer? Is such delegation a convenient way to avoid our own responsibilities and to ignore other important social issues? Are health and pathology adequately defined in terms of medical science and practice or do these definitions necessarily involve statements about personal and social values?

Before any of these questions can be explored some terms and concepts must be defined; what we know and, equally important, what we do not know about how chemicals affect the human organism and what we do and do not know about complex behavior and how it may be affected by chemicals must be surveyed.

II. FACTS ABOUT DRUGS: PROBLEMS AND ISSUES

The term "drug" has many meanings. The two which are most frequently used by the layman are derived from the medical approach and from the legal approach to drugs. The one equates a drug with a medicine prescribed by the physician for specified and limited use in the treatment and prevention of disease, in the relief of pain, and in restoration of a feeling of well-being. The other equates it with a habit-forming narcotic which is widely believed to be so dangerous to the individual and to society that it must be controlled by governmental agencies. Influenced by these two limited definitions, our first impulse is to consider a campus drug problem as either a medical or a legal problem or both and to engage students in discussions about the health and legal risks of drug use. But we find that the students are less interested in talking about risks than about aspects of drug use not wholly encompassed by the medical and legal approaches. Their current interest in drugs grew as they read and learned that others were using certain drugs for such bona fide or illusory purposes as discovering more about one's self, exploring the mind, and searching for new meanings in personal relationships and in the universe itself—or for expressing disapproval for society and some of the laws they believe to be unjust or idiotic. They also became interested in the right to use drugs for such very personal and seemingly important purposes. Such interests require that drug use be considered in relation to ethical, religious, philosophical and social values as well as in relation to medical and legal facts. To be prepared for dialogue at this level, we must find a broad and objective definition of the term "drug."

What is a drug?

The pharmacological definition of a drug offered by Modell is both broad and objective: "Any substance that by its chemical nature alters structure or function in the living organism is a drug."[1] Its breadth is shown by the list of substances which alter structure or function: "Foods, vitamins, hormones, microbial metabolites, plants, snake venoms, stings, products of decay, air pollutants, pesticides, minerals, synthetic chemicals, virtually all foreign materials (very few are completely inert) and many materials normally in the body." [2] Its objectivity rests in its being descriptive rather than evaluative. Other more limited definitions of the term "drug" may be more useful depending on the kinds of substances and the kinds of short-term and long-term effects, both organismic and social, one wishes to discuss. These more limited definitions are usually based on assumptions about certain kinds of effects. For example, in formulating a definition useful in writing a good popularized book about drugs of current interest, Laurie [3] says, "For the purposes of this book, a "drug" is any chemical substance that alters mood, perception or consciousness and is misused, to the apparent detriment of society." This is helpful, since the two limiting assumptions are made explicit: (1) There are effects on mood, perception, or consciousness, and (2) there is potential for misuse defined as apparently detrimental to society. Thus in reading this book, we know the special meaning to attribute to the term "drug" whenever it appears. On the other hand, in reading about drugs in other discourse, especially popular and journalistic discourse, we find that the term "drug" may mean many different things and that the assumptions of the writer may be unstated or vague or even erroneous (e.g., all psychoactive drugs are addictive, provide an escape to nowhere or lead inevitably to the use of heroin), going far beyond what is scientifically known about drugs. Such assumptions, when implicit, erroneous or dogmatic, interfere with clear thinking and effective communication.

Pharmacologists classify these drugs in many different ways; some classifications are based on the chemical structure of the substance, others on the effects of the substance on cellular functions, on physiological and biochemical systems, or on behavior and experience. Different modes or levels of classification are necessary because two drugs with similar chemical structure may produce very different patterns of drug action; or two with very dissimilar chemical structures may produce similar physiological or behavioral effects.

The physician thinks of drugs on the basis of their pharmacological classification, but he also has to be particularly interested in such criteria as: (1) the usefulness of the drug in the diagnosis, treatment, and prevention of disease, in the relief of pain and in the improvement and preservation of health, (2) the side effects of the drugs, (3) the toxicity of the drug in both acute and chronic use, (4) the purity and potency of the drug in the form available to the patient. Essentially these are criteria of therapeutic effectiveness and of safety. New drugs are developed and evaluated according to strict regulations based on the above criteria and administered by the Food and Drug Administration (FDA). Still other substances are of concern to the physician not because of their therapeutic efficacy but because of their toxicity; examples are the household, agricultural, and industrial poisonous chemicals which may be accidentally, involuntarily, or deliberately absorbed by the individual.

Drugs may also be classified in other ways. A drug may have originally been available only as an unknown active agent in a plant product, like coffee, tobacco, marihuana. The active ingredient was then identified, isolated and made available as a derivative from the plant or synthesized from other substances. Drugs also vary in legal status, depending on the nature of the controls on their production, evaluation, distribution, sale, and possession, as established by law. Drugs may also be classified according to social usage. Alcohol and tobacco have for centuries been so widely accepted for general use that governmental controls are now limited to what is acceptable to the public. Peyote is officially classed as a drug with potential for abuse but is legally available to the Native American Church, since this group has for some time used the substance ritually and has what are considered appropriate social controls on its use.

Interesting and sometimes paradoxical attitudes and beliefs about specific drugs emerge out of these complex classification systems, sets of criteria and patterns of use. Ethyl alcohol and diluted ethyl alcohol are currently listed as official preparations in the "United States Pharmacopeia" (U.S.P.). Whisky, brandy, and sherry wine were formerly official preparations but are no longer so. Society prefers to think of alcohol as a beverage rather than as a drug. Marihuana, a term which has come to refer to all preparations containing parts of the common hemp plant or extracts from the plant, was formerly listed as an official preparation but has now been removed. Its production, distribution, and possession are legally severely restricted in this and many other countries. Although it is not a narcotic drug, the laws for controlling it are similar to those for the control of narcotics. Some States have arbitrarily defined it as a narcotic, and most laymen thus consider marihuana to be a narcotic; others regard it as a social drug similar to alcohol. Nicotine, an active substance in tobacco smoke, is not generally used for therapeutic purposes. It and other substances found in tobacco smoke (like those found in airplane glue) can be generally classed with the many toxic substances which are of interest to the physician primarily because of the injury done to the individual who inadvertently or deliberately absorbs them. The present controversy over the presence or absence of injurious effects from chronic smoking of cigarettes emphasizes the importance of and difficulties inherent in the statistical validation of drug effects.

We return, then, to our original definition of a drug as *any substance which by its chemical nature alters structure or function in the living organism.* Any of these substances may become relevant to the drug problem as man increases his exposure to or involvement with the substance.

How do drugs act?

Drugs are absorbed into the body in many ways at a variety of sites; they are then distributed differentially through the body and sometimes stored in tissue or accumulated in the blood stream for short or long periods; they are usually transformed by organic processes into other substances and eventually excreted primarily via the kidney or liver. During the transformation phase the drug or one of the substances to which it has been transformed may combine with one or more of the functional components of cells in the body and, as a result, alter the functional action of those cells. It is a fundamental fact that drug action is not the action of the drug itself but the responses of living cells modified by the presence of the drug. Thus, an understanding of drug actions requires prior understanding of the normal functioning of the cell.

Fingly and Woodbury point out that "* * * too little is known of cellular biochemistry and physiology to permit other than an incomplete or superficial explanation of the mechanism of action of most drugs." [4] Current assumptions are that many drugs exert their action by combining with specialized functional components of cells, modifying the function of the cell component and thereby producing changes in biochemical, physiological and behavioral systems. These changes are what are known as drug effects. For example, one hypothesis of the action of LSD in the central nervous system is that, because of its structural similarities to the cell-produced substances which are hypothesized to allow a nerve impulse to pass from one nerve cell to another over a synapse, it occupies the site of this substance and may initiate the nerve impulse. Since it is not identical with the endogenous substance, it is not readily destroyed or removed by the biochemical processes normally acting on the endogenous substance. This may provide a possible explanation for the action of LSD in the central nervous system. The relationship of these changes in the central nervous system to the effects of LSD on behavior and experience requires still more hypotheses.[5]

The action of most drugs is extremely complex and involves many processes, some of which are as yet little understood. Among other things, it is a function of the substance's solubility, its concentration, the circulation to the site of absorption, the area of the absorbing surface, the route of administration, the speed of absorption. Once in the blood stream, the drug must enter or pass through body fluid compartments. Its differential ability to do this is a function of its particular molecular structure, the nature of the particular cell membranes, how it interacts with plasma proteins, is stored, metabolized, transported, redistributed, transformed by substances present in the blood or various organs of the body. Drugs may either change or be changed by these processes. Each of these processes and states may vary, within certain ranges, from individual to individual and in the same individual from time to time, depending on temporary or permanent variations in any of these factors. Each one of these factors must be taken into account in assessing the action of a given drug or in comparing the actions of different drugs.

The human organism is continually producing chemicals and modifying both the chemicals it produces and the chemicals incorporated into it. In studying the effects of drugs on this complex system we are trying to uncover the effect of a known chemical substance upon an unknown system. The more complex the system and the less its functioning is understood, the more tenuous are speculations about how a foreign substance interacts with it.

Of all systems the central nervous system is perhaps the most complex and the least understood.[6] It is composed of billions of anatomically and chemically complex neurones as well as uncounted structural or supporting cells which are hypothesized by some to produce chemicals themselves. The problem of understanding the anatomical and functional complexities of the human nervous system poses the ultimate challenge for the mind of man.[7] The relations of these complexities to the complexities of human behavior lie even beyond this ultimate challenge. Theories or principles concerning the relationships between drug and central nervous function and between central nervous function and complex human behavior represent best guesses on the basis of best guesses.[8] One thing is known with certainty: There are no direct, simple, reliable, cause and effect relationships between a drug and any behavior.

What are drug effects?

In one sense there is no such thing as the effect of a given drug, as the term is generally used in relation to behavior. In another sense drugs have a very real effect. In large enough dosages, the amount varying from individual to individual, the assault on the organism is great enough to produce severe toxic reactions such as convulsions, hemorrhages, coma, and death. In that sense virtually all drugs are dangerous. But at moderate dosages for most people the drugs which influence behavior do so by increasing or decreasing the probability that certain responses may occur or by modifying certain responses which do occur; furthermore, this influence is highly dependent on the presence or absence of other nondrug factors—physiological, psychological, and environmental.

The preceding discussion indicated that a drug may be classified on the basis of the physiological function upon which it has a primary or important effect, as on renal function, cardiovascular function, or on one or more of the functions of the central nervous system. Few, if any, drugs have a wholly specific effect; that is, an effect on only one functional system. In the initial assessment of a new drug or unfamiliar substance, it is not feasible to test its possible effects on the full spectrum of bodily functions and structures. If it is adopted as a safe and useful drug because of its effects on one function and its minimal effects on some others, only extensive and prolonged use in clinical practice may reveal that it does have important side effects; that is, effects other than those on the basis of which it was originally adopted. An important side effect, if harmful, may lead to a ban on the drug, to the development of similar drugs with fewer side effects, or, if beneficial, the side effect may come to be considered the main effect and the effect originally considered the main effect becomes, in a sense, the side effect.

In response to the interest in understanding the behavioral effects of drugs modifying central nervous system function, there has developed within the past 20 years the interdisciplinary science of psychopharmacology. Its findings are of great interest and importance to the general public. But at the same time, its focus on behavior makes it a tremendously difficult field in which to work. Ideally, an understanding of the behavioral effects of a drug would involve knowledge about its action at the cellular level, the way in which this action interferes with or modifies physiological systems and the way in which these modifications influence behavior. This knowledge has not yet been fully achieved for any drug. Thus the psychopharmacologist often has to concentrate on just the behavioral effects and here he encounters an almost overwhelming variability in his data. From the viewpoint of behavior, it does often seem that there is no such thing as a completely predictable drug effect.

A psychoactive drug does different things to different people, and even to the same person, depending on external and internal circumstances. Among the many factors which modify the effects of a drug are dosage level, route, and speed of absorption (ingested, inhaled, injected), time of administration, temporary state of the organs involved in inactivation and excretion of the drug, tolerance, general physiological variations (water balance, acid base status, body temperature), genetic factors (enzyme or blood deficiencies), interaction with other absorbed drugs, age, sex, pathological conditions (nutritional status, disease), and environmental and psychological factors (setting, suggestion, knowledge, expectancy, motivation, mood, other competing behavioral systems, etc.). In their discussion of important factors which modify drug effect, Fingl and Woodbury state: "Even when all known sources of variation are controlled or taken into account, drug effects are never identical in all patients or even in a given patient at a given time."[9]

The abundant evidence that psychological and environmental factors modify drug effects, particularly behavioral effects, gives rise to still another kind of skepticism: Is the observed effect actually a result of the administration of the drug or is it a result, partially or wholly, of some combination of nondrug factors known to influence that effect? This question leads to the fascinating literature on the placebo,[10] a substance *known* by the scientist or physician to be inactive pharmacologically but *believed* by the subject or patient to be a drug with effects judged to be interesting by the scientist or beneficial by the physician. Under certain circumstances and with certain individuals (both administrator and taker of the placebo), placebos may have definite primary effects such as relief of pain, headache, migraine, motionsickness, some neurotic conditions, hayfever, colds, coughing, and digestive complaints. They may also produce side effects such as sleepiness, headache, feelings of heaviness, difficulties in concentrating, nausea, relaxation, and dry mouth.[11] Similar to a placebo effect is the well-known "contact high" experienced by an individual who drinks soda water and smokes cigarettes at a congenial party in which others are enjoying more potent substances. When a drug is administered at a dosage level so low that it is relatively inactive pharmacologically, it may be considered to be an impure placebo. Since many of the most interesting and desired effects obtained through use of psychoactive drugs are more likely to occur with relatively moderate doses of the drug, it is often difficult to distinguish between the effects of the drug as placebo and the effects of the drug as a pharmacologically active substance. Some of the most thorough and brilliant experiments in psychopharmacology have been designed to confront this question. All agree that much progress has still to be made. This should lead to healthy skepticism about any drug as a major determinant of behavior and to continued study of the individual who uses the drug.

Effects of continued use

Some drugs, when taken repeatedly, produce lasting changes in bodily function and structure. Such changes may develop in different ways. As an example, bromide, a central nervous system depressant, is excreted at a very slow rate so that if taken daily a part of each dose stays in the blood for many days and adds to the amount already accumulated from previous doses. The poisoning which results from a high cumulative level of bromide produces various symptoms including some behavioral disorders which may persist after complete elimination of the bromide from the body. An example of another mechanism underlying some lasting effects is cellular or tissue damage produced by the drug.

The long-term effects of psychoactive drugs which are of most general interest are tolerance, physical dependence, and psychological dependence. Tolerance is the most general of these three terms, since it is relevant to many drugs other than those affecting the central nervous system. It refers to the phenomenon that with repeated use of some drugs larger and larger amounts are required to produce the same effects. The mechanisms involved in the development of tolerance are poorly understood.[12] Tolerance may have important psychological and social consequences as the individual finds that increasingly large amounts of the drug are required to produce the desired or expected effect; nevertheless, tolerance is not always accompanied by a psychological need for the drug. Cross-tolerance refers to the fact that tolerance developed for one drug may also result in tolerance for similar drugs. For example, tolerance for either alcohol or barbiturates engenders tolerance for the other.

Drug dependence, whether physical or psychological or both, results from periodic or continued use of certain drugs. The nature of the dependence varies with the drug. Physical dependence refers to the state of the physiological systems which have been so modified by drug action that in order to function they now require continued administration of the drug; these functions are interfered with if the drug is withdrawn; withdrawal symptoms then appear in a pattern specific for the drug and called the abstinence syndrome. These withdrawal symptoms are usually the only dependable evidence as to whether or not physical dependence has developed, and their intensity is taken as an index of the severity of the physical dependence.

Psychological dependence on a drug may develop independently of whether or not the drug has produced either physical dependence or tolerance or both. Psychological dependence on a drug refers to the fact that the individual has learned to rely on the drug for certain effects which give him a feeling of well-being. The drug and the habitual activities associated with taking it become essential for the improvement of mood. With psychological dependence, even in the absence of both tolerance and physical dependence, the individual feels a definite need for the expected drug effects, a need which may be mild or intense or even compulsive. This need is based more on the individual and the meaning he attributes to the drug and its effects than on the effects themselves.

When is a fact a fact?

There are many reasons why the facts invoked in nonscientific discussions of drugs are often not facts at all. They may be second-or third-hand quotations of statements attributed to a scientist. There is a readiness on the part of many to accept as scientific fact any statement made by or attributed to someone labeled as scientist whether it is a statement based on research, on uncontrolled observation or merely on personal opinion. The concepts science and scientist are often endowed with either an aura of uncritical awe or with outright suspicion and disdain. This further contributes to the controversy and confusion and becomes critically important in encounters with students who tend to question anything that is unscientific, expecially if it does not fit with something they believe, and to overrate anything that is scientific, particularly if it supports something they believe. In this they are no different from most people. It would seem that we have educated them too well in some respects but not well enough in others.

What can science offer? Can it provide facts? If by that question one means, "Does science have all the answers?" the answer is incontrovertibly "No." If, however, the question is, "Can science contribute to understanding and help to minimize errors of generalization?" the answer is just as surely "Yes."

Another problem in translating a scientific fact into popular discourse arises from failure to understand the statistical methods which must be applied in the study of biological, behavioral, and social phenomena. Living organisms vary greatly in structure and function. Descriptive statistics, such as averages and percentages, enable us to make summary statements about a group of organisms, while inferential statistics enable us to make properly qualified statements about the generalizability of data from a small sample to the general population and to identify and make explicit the various kinds of error inherent in the data. These statistical summaries, inferences, and statements about error can be easily misinterpreted when the essential facts about variability, about the specific nature of the sample and the population from which the sample is drawn, about the limitations of generalizations and the presence and type of error are forgotten or ignored.

Variability.—There are essentially two kinds of variability which must be taken into account in research on biological organisms: Variability among individuals, or individual differences, and variability within the individual, or differences in the same individual from time to time. The recognition of both sources of variability is crucial in interpreting the results of studies on drug action.

The complications arising from differences among individuals can be illustrated using the familiar height/weight tables for normal weight. A statement about normal weight is a statistical statement and as long as the population to which the norm is applied corresponds in important ways with the sample for which the norm was developed it can be a useful statement as well. However, when important parameters of the relationship are ignored, the statement becomes meaningless. For instance, the application of the height/weight table for middle-aged men to an adolescent female would be clearly ridiculous. In the height/weight relationship, sex and age are parameters; i.e., factors which limit the nature of the relationship. In the area of complex behavior, the dependence of generalizations on the particular population from which they were derived becomes even more crucial. Individuals are known to vary on numerous physical, psychological, social, and cultural parameters, but the relationships among these parameters are only partially, if at all, understood. Charts, tables, and generalized inferences are useful only to the extent that they take cognizance of the multiplicity of factors that are known to influence the particular characteristic or function involved. At best they serve as a guide, as a best guess for any given individual. The more closely that individual resembles individuals in the group on which the measurements were made, the more useful a guide it will be for him. In the search for simplicity, these basic methodological principles are often ignored, misinterpreted or rejected outright, and we are led astray in the conclusion we draw.

The second major source of variability is that which occurs within the same organism during relatively short or long periods of time. The scientist, clinician, and engineer are thoroughly familiar with the fact that when dealing with a dynamic system, such as the living organism, one must recognize that a particular effect depends on the state of the system. A specific effect, no effect, or even a seemingly paradoxical, reversed effect may be observed in a system which may appear unmodified but in which subtle or obscure but important changes have occurred. Most laymen have learned that the effect of alcohol varies with the amount of time since they have last eaten, fatigue, mood, illness, and other factors which may be subtle or obscure. Nevertheless, both scientist and layman frequently infer that the specific effect observed at one time will tend to be reproduced whenever the individual takes that drug again, thus ignoring the changing individual as an important source of variability of response.

The layman, in reading about drug effects and in learning that such labels as stimulant and depressant are officially applied to certain drugs, has often been led to believe that taking a drug leads to almost completely dependable effects. Sooner or later he encounters contradictory statements in the reports of experts or contradictory effects in his own experience with a drug or in that of his friends. In addition many seemingly paradoxical findings are reported in the psychopharmacological literature. It should be clear by now that there is no such thing as a completely dependable drug effect and that such contradictions and paradoxes reflect the between- and within-individual variability discussed above. A few examples are provided below to illustrate these inconsistencies.

Factors contributing to variability.—In normal individuals the effect of a psychoactive drug may depend on various relatively enduring personality traits. DiMascio, Klerman, and others at the Massachusetts Mental Health Center have identified many such examples.[13] An antidepressant drug which decreased depression in subjects judged to be more highly depressed in a normal population, increased depression in those judged to have a low chronic level of depression. Similar contradictory results were found for some antianxiety drugs when administered to high and low anxiety normal subjects. In another study, sedative drugs were more effective for normal subjects judged to be passive, intellectual, anxious, and intropunitive than for subjects whose personalities seemed organized around active mastery of the environment through athletic prowess and aggressiveness.

Behavioral and mood effects often depend on whether the individual is in good mental health or whether he is mentally ill. Shagass [14] has shown that it requires different dosage levels of amobarbital to produce both sedation and sleep in normals, neurotics, and psychotics; hysterical neurotics require lower dosages than normals but patients with neurotic depression or anxiety require almost twice as much; organic psychotics require far less than normals but borderline schizophrenics more than twice as much as the organics. Most normal subjects do not respond positively to such tranquilizers as reserpine and chlorpromazine but some mental patients do; and even for these patients these drugs are effective only to some degree, in some patients, some of the time.[15] Those who have developed dependency on morphine usually get a euphoric effect from the drug but the majority of normal pain-free individuals experience the opposite effect, dysphoria, often accompanied by nausea and vomiting.[16]

Response to drugs also depends on temporary states of the individual and on factors in his immediate environment. Secobarbital is more likely to produce a pleasant mood in an experimental subject who is interacting with other subjects who have also had secobarbital than in a subject whose partners are in a sluggish, withdrawn mood after having received an antihistamine.[17] The mood changes following an injection of adrenaline are highly dependent both on what the subject expects the physiological effects of the drug to be and on the mood of his partner in the experimental situation.[18] Beecher contrasts the ineffectiveness of powerful narcotics, even in large dosages on the threshold for pain when measured in the laboratory with their clinical effectiveness, even in small doses, in lessening or relieving completely the pain of great wounds.[19] In searching for an understanding of these nonspecific (i.e., psychological and environmental) factors, he reviews their effect on the nature of pain itself: Soldiers with wounds at Anzio tended to experience less pain than did postoperative civilians with smaller, surgical wounds, since the former interpreted the wounds as a ticket home while the latter interpreted the wound as a calamity. More of the latter also requested administration of a narcotic.

All of these studies again demonstrate that an understanding of the behavioral effects of drugs requires an understanding of the psychology of the individual himself.

This chronicle may have resulted in either of two reactions: (1) The conclusion that all of this is much too complex and that it is essentially an argument against attempting to do anything about a situation which is of increasing concern to an increasing number of people. It is not meant to do this. (2) The conclusion that the real problem is not drugs but the people who use drugs. It is increasingly evident that people with problems—personal, social, intellectual—use drugs and it is the individual with his reasons for using drugs that is the key to understanding drug use.

It has been repeatedly demonstrated that people who use drugs almost invariably use many drugs. If one drug becomes unavailable they usually turn to others, and there are going to be others, more potent and more controversial than any we now know. In testimony before a Senate subcommittee concerned with research and regulatory programs for LSD, Dr. Stanley Yolles, Director of the National Institute of Mental Health, stated, "If I were to be allowed a guess as to the future, the next 5 to 10 years, I would predict one will see a hundredfold increase in the number and type of drugs capable of affecting the mind * * * it (LSD) is a prototype of the drugs that are being developed, and the possible problems that may develop in connection with them." [20] There is no hope that these drugs will remain exclusively in the laboratory or the clinic until they have been thoroughly evaluated. The right to know will spread information about them throughout the country long before they can be tied up in a neat package, wrapped in scientific and medical respectability, and stamped with government approval. Those which promise enough individuals something they need or which seems intriguing will be used, misused, or abused, depending on one's point of view.[21] It is unrealistic to assume that all new drugs will be exclusively and effectively controlled by present medical and legal regulations and practices. For example, who can predict the popular, the medical and the legal response to a substance with an appeal like that of improving memory? Pandora's box is open and its contents are as endless as the contents of the biblical bottle of oil. It is necessary to work at the general problem rather than to expect to deal with each new drug as it appears. The task is thus to educate, not about the evils of heroin, marihuana, LSD, and the dangers of specific stimulants and depressants, but about people, about chemicals and how they interact with people, about social control, about the positive and negative consequences of drug use for the individual and for society, to the extent that we know, rather than imagine them. We must help young people make informed decisions on the basis of broad general principles.

Notes

[1] Modell, W., "Mass drug catastrophes and the roles of science and technology." *Science*, 1967, *156*, p. 346.

[2] Ibid., p. 346.

[3] Laurie, P., *Drugs: Medical, Psychological and Social Facts.* Baltimore: Penguin (S249), 1967, p. 11.

[4] Fingl, E. and Woodbury, D. M. General principles. In Goodman, L. S. and Gilman, A. (editors), *The Pharmacological Basis of Therapeutics.* (3d edition) New York: Macmillan Co., 1965, p. 1.

[5] Abood, L., "The biochemistry of psychoactive drugs." *Background Papers, NASPA Drug Education Project, 1966.*

[6] Pharmacologists insist that no other system is any easier to understand.

[7] Esplin, D. W., "Drug action on the central nervous system." In Goodman and Gilman, op. cit., p. 43.

[8] Giarman, N. J. and Freedman, D. X., "Biochemical aspects of the actions of psychotomimetic drugs." *Pharmacol. Rev.*, 1965, *17* 1–25.

[9] Fingl, E. and Woodbury, D. M., op. cit., p. 21.

[10] Beecher, H. K., "The powerful placebo." *J. Am. Med. Assoc.*, 1955, *159*, 1602–1606.

Fingl, E. and Woodbury, D. M., op. cit., p. 31.

Haas, H., Fink, H., and Hartfelder, G., "The placebo problem." *Psychopharmacology Service Center Bulletin*, 1963, *2* (8), 1–65.

Kurland, A. A., "The placebo effect." In Uhr, L. and Miller, J. G., *Drugs and Behavior*. New York and London. John Wiley & Sons, 1960, pp. 156–165.

Lasagna, L., Laties, V. G., and Dohan, L. J., "Further studies on the pharmacology of placebo administration." *J. Clin. Invest.*, 1958, *37*, 533–537.

Trouton, D. S., "Placebos and their psychological effects." *J. Ment. Sci.*, 1957, *103*, 344–354.

[11] Haas, H., Fink, H., and Hartfelder, G., "The placebo problem." *Psychopharmacology Service Center Bulletin* (National Institute of Mental Health, HEW), 1963, *2*(8), 1–65.

[12] Fingl, E. and Woodbury, D. M., op. cit., p. 24.

[13] DiMascio, A. and Klerman, G. L., "Psychophysiological studies of psychoactive drugs." In Uhr, L. and Miller, J. G., op. cit., pp. 360–364. (See bibliography.)

[14] Shagass, C., "Drug thresholds as indicators of personality and affect." In Uhr and Miller, op. cit., pp. 399–404.

[15] Hollister, L. E., "Evaluation of drugs in psychiatric patients." in Farber, S. M. and Wilson, R. H. (editors), *Conflict and Creativity: Control of the Mind*, pt. II. New York: McGraw-Hill (paperback No. 19939), 1963, pp. 127–137.

[16] Lasagna, L., Von Felsinger, J. M., and Beecher, H. K., "Drug-induced mood changes in man. 1. Observations in healthy subjects, chronically ill patients, and post addicts." *J. Am. Med. Assoc.*, 1955, *157*, 1006–1020.

[17] Nowlis, V. and Nowlis, H. H., "The description and analysis of mood." *Ann. N.Y. Acad. Sci.*, 1956, *65*, 345–355.

[18] Schachter, S. and Singer, J. E., "Cognitive, social and physiological determinants of emotional state." *Psychol. Rev.*, 1962, *69*, 377–399.

[19] Beecher, H. K., "Nonspecific forces surrounding disease and the treatment of disease." In Uhr and Miller, op. cit., pp. 101–110.

[20] Hearings before the Subcommittee on Executive Reorganization of the Committee on Government Operations, U.S. Senate, 89th Cong., May 24–26, 1966. U.S. Government Printing Office, Washington, D.C. 20402.

[21] Cole, J., "Behavioral toxicity." In Miller, J. G. and Uhr, L. (editors), op. cit.

III. THE STUDENT AND HIS CULTURE

Assuming that it is more profitable to look at the drug user than at the drug and that most reasonably normal people do not continue to do something that does not provide them with at least some satisfaction, we now look at the student and the demands of the world in which he lives and grows. Such questions as whether using drugs should be satisfying or whether the needs they are perceived to satisfy are legitimate needs are in some ways irrelevant. The needs are felt as real, they motivate behavior, and they cannot be wished away.

Venturing into this area warrants a repeated warning, lest it be forgotten. Just as students differ, students who use drugs differ, and it is a great mistake to get overenthusiastic about any one explanatory idea. This becomes increasingly true as drug use spreads. There are, however, some general observations which may be useful.

All college students are at one or another stage in growth from childhood to adulthood. This growth process involves both the unlearning of modes of behavior which were appropriate and rewarded in childhood and the learning of new modes in accordance with society's definition of the adult role, a definition which is neither clear nor consistent. Becoming adult involves, at a minimum, substituting independence for dependence, individual identity for borrowed or assigned identity, and meaningful social relationships with a variety of individuals outside the family circle for basic relationships inside the family. It involves development of meaningful sexual identity and appropriate masculine or feminine roles and a meaningful relationship to life and the meaning of life. The attainment of maturity also involves the ability to postpone immediate gratifications in the interest of long-range goals. (The atomic bomb and the buy-now-pay-later philosophy seem to have contributed little to the development of this ability in either youth or adult.

Neither meaningful identity nor a set of values to live by can be bestowed like a mantle. They must become a part of one's being, and the process of internalizing them can be painful, both for the person and for those who care. Becoming independent may, some believe must, involve rebellion. Developing an identity consistent with one's talents and abilities, hopes and dreams, requires hard work and experimentation which may be unsuccessful more often than it is successful. Developing mature, meaningful social relationships is difficult at best and the more so if independence and some degree of identity have not been achieved. Tolerating the frustration involved in postponing gratifications can make other frustrations seem greater. Finding the meaning in life and being at peace with one's self and one's God are goals many adults never attain.

The irony of the appeal of LSD is that, in one way or another, it can be perceived as offering a promise of help in all of these difficult tasks. It seems as if nothing could have been better designed, either by the proponents of LSD or by the mass media which publicized it, to appeal to the personal, social, and emotional needs and the idealism of these young people who are "hung up" in a society which has made adolescence so prolonged and adulthood so uncertain. What LSD is said to offer is inviting fare for the weary traveler, inviting in direct proportion to the degree of weariness.

There are other reasons why students use drugs and, for the most part, they are the same reasons why adults use drugs such as alcohol, tranquilizers, amphetamines, barbiturates, aspirin, nicotine, and caffeine. All of these are widely used by a variety of people for a variety of reasons—for a change of pace, to change mood, to reduce anxiety, for a pickup, to combat fatigue, to relieve tensions, to relieve boredom, to facilitate social interaction, to sleep, just for fun. It would not be surprising to find that some 4-year-old watchers of television could name a specific product for each purpose.

Some adults try these drugs, some react badly or do not find what they are seeking and never try again; some use them occasionally; some use them socially; some use them to escape; some are as dependent, psychologically and in some cases physically, as they would be if their dependence were on an opiate. The main difference is that these substances are socially acceptable and are fairly easily available. Man has used drugs throughout the ages to escape from discomfort and misery. It is interesting to note that in our society misery is a condition familiar not only to the socially and economically depressed but also to those who are in the midst of success.

There are many other appeals. More young people than most adults would care to admit are weary of chasing the same carrot at the end of the same stick for 14 to 16 years; they dream of getting out of "the rat race" just for a while. Some take a junior year abroad, others do their stint in the military, some take time out for VISTA, some keep their noses to the grindstone, hating it to varying degrees, some flunk out though not for lack of ability, some take a marihuana dropout on weekends. LSD invites them to do what some want most to do, with the company of like-minded peers as a bonus, to solve their problems, whether these be rebellion or the search for independence, for identity, for satisfying social and personal relationships, for values which are not confused and uncomfortable, or for a meaningful religious experience. To drop out the LSD way does not require long arguments with the stockholders—parents, deans, other adults—few of whom seem likely to be persuaded that a moratorium is a positive, constructive, appropriate action at this time and for these reasons. LSD can appear to be a painless way to experiment with dropping out, to escape temporarily into a bright and shiny world, a world in which people are interested in what really seems to matter, not what should matter, what one is and wants to be, not what he should be.

The response of society to student drug use may foster further use when that response is based on assumptions which seem contradictory or hypocritical to the student. For example, it is widely assumed that when there is no medically approved reason for taking a drug the individual has no right to take it. A further questionable assumption is also made: Since the only legitimate use of a drug is in the treatment of illness, anyone who takes a drug is, ipso facto, ill—or criminal. The students who reject both assumptions point to alcohol as a potent drug about the use of which society makes completely different assumptions: The individual does have the right to choose to take alcohol for other than medical reasons, and the person who uses alcohol properly is not considered to be ill. They then argue that the attitudes toward alcohol should be extended to include other seemingly nondangerous, nonmedical drugs.

The fact that so many young people are ready to consider just what it is that LSD and the group who use it have to offer should make us think not only about students and drugs but also about the society in which the student has grown up.

The more one inquires into all aspects of the drug problem the more one is impressed with the importance of availability. Has there ever been a society in which drugs were more widely available than in current American society? It is a society dedicated to progress through chemistry. Since infancy the student has learned to open his mouth on command and swallow whatever was popped in to cure what ailed him, and he has watched his parents do the same. A very significant portion of the family budget is often spent on drugs, tobacco, and mood-changing beverages. One study suggests that the average household may have as many as 30 drugs in its medicine cabinet. Blum [1] notes that users of illicit and exotic drugs, in contrast to nonusers, had been ill more often as a child, had been taken to the physician more frequently, and had taken more medications. He also suggests that there are many confirmed drug-optimists, individuals who have grown up confident that for every ill there is a drug which will cure it.

Unfortunately, there are more and more individuals who think that each ill needs not one but many drugs. Wahl [2] has recently described a symptom complex, status medicamentosis, which results from indiscriminate medication with too many drugs. He argues that it develops as a result of two social-psychological factors: (1) A widespread and intense belief in the power of medication, a belief which ignores the limitations and side effects of drugs and which is a byproduct of constantly hearing about the impressive and diverse successes of medical science, and (2) the deterioration of patient-doctor relationships in an era of increased specialization. Relying more on medication than on the physician, the person medicates himself excessively and indiscriminately. He uses medication as a kind of magical protector and depends on medication rather than people to handle certain emotional drives and needs.

That physicians themselves contribute to this situation is suggested by Louria. At present time, it is a reasonable estimate that half of the sedatives and tranquilizers prescribed by physicians are given unnecessarily. If the medical profession will rigidly limit the use of these drugs, it is likely that at least some of those who would otherwise illicitly use them would realize the inadvisability of medicating themselves with these potentially dangerous agents.[3]

Another important aspect of current society is its attitude toward risk. Students have grown up in an atmosphere which takes risks for granted and assumes that there is little that can be done without risk. Risk-taking ideally involves rational decisions about the utility of a certain action, decisions which are based on informed estimates of both the value of the goal and the probability of gain or loss, of reward or disaster. Despite obvious risks, cars are driven on freeways and airplanes are filled with passengers because rational men continue to believe in the utility of doing so. But risk-taking is more often based not on rational decisions but on irrational thinking, habit, hunch, impulse, mood, or information that is inadequate and erroneous. A temporary feeling of invulnerability may lead the individual to believe it won't happen to me. Or feelings of hopelessness or of being discriminated against may lead him to believe he has very little to lose and much to gain. Thus an adequate description of the risks involved in drug use may serve as an effective deterrent to some but have no effect or even the opposite effect on others.

One does not have to look far to see other aspects of the society in which the young person finds himself which may be relevant in understanding much of what is happening. The fact that our society holds certain beliefs to be inviolable even as it violates them adds other complications to the process of growing up. Most young people have learned their verbal lessons well—love not hate, brotherhood not discrimination, equal opportunity, freedom from fear and want, equality in diversity, the basic worth of the individual. But the world is not like that. With the straightforwardness that so often characterizes youth, some scream hypocrisy while others set about trying to live according to these basic beliefs.

It has frequently been pointed out that ours is an achievement-oriented, environment-dominating society which almost exclusively values and rewards intellectual or cognitive performance to the exclusion of the life of emotion and feeling. It is a society which often measures success and prestige in terms of material possessions, which considers a young person privileged if he comes from a family which has a modern home, several cars, and an income sufficient to provide travel, a college education, membership in a country club, or perhaps a summer home. Far more young people than those who turn to drugs are uneasy in this climate. Some of them look at eminently successful parents and do not like what they see or sense. They wonder if getting an education in order to get a job which will provide them with sufficient income to live in the suburbs and be miserable, become alcoholic, develop ulcers, get divorced, is worth the struggle. There must be something else. The books they read—Sartre, Hesse, Thoreau, Heller, Heinlein, Huxley, Bellows, Tolkien—suggest that there may be.

They feel the need for deep and meaningful experience in an increasingly secular society. Because the church, as organized religion, seems to reflect so many of the trends in society which they find distasteful, they are attracted to the Eastern religions with their emphasis on mysticism and personal religious experience. They want a personally meaningful part in a world which seems so full of aggression, discrimination, poverty, famine, alcoholism, divorce, and hypocrisy that the individual seems superfluous. They want a frontier in which to find adventure, challenge, and an opportunity to prove themselves at a time when the only frontiers available for the many would seem to be the technological jungle or the world within. Some of them are rejecting the jungle and withdrawing into the inner world.

The explosion in population and urbanization has contributed to an impersonality in which one's identity is more determined by what one owns, where one lives and works or goes to a college, what one wears, in short, what one appears to be, than it is by what one thinks and feels and is. The explosion in communication, technology, and the mass media has resulted in what Keniston[4] has called stimulus flooding, a constant bombardment of information, of points of view, of advertising, of happenings in every corner of the globe, even in outer space—more information than any man can process, more din than he can tolerate. In perfectly good human fashion he responds by screening it out, ignoring it, protecting himself against more and more of it, and by becoming numb. But the screen may become so dense that it isolates him as well from direct experience with the simple, the beautiful, the unexpected in the world around him. The preoccupation of some of the drop outs with flowers, sunsets, folk songs, togetherness, and meditation is not without significance, nor is the preoccupation of others with a din of their own making. There is more than one way to shut out the world.

Many of the trends in society are paralleled in the institution of higher education. Responding in part to the pressures of society and in part to the pressures of increased knowledge and specialization, many institutions have grown tremendously in size and complexity. Their students encounter increased impersonality and frustration in everything from practices in the cashier's and registrar's offices to the conduct of courses and the administration of degree requirements. This impersonality and dehumanization come at the very time in development when young people need recognition from the social environment of their growing individuality and desperately want meaningful relationships with important adults, although on their own terms and at their own times. Wherever they are, but particularly if they are in college, they are concerned to varying degrees with self-discovery. By this they mean their own search for their own identity in the world as they perceive it, a search which goes beyond the mere acceptance of a pattern to which they are expected to conform. Despite outward appearances they really want custom tailoring. They are preoccupied with being themselves but, since they are not yet sure just what that means, they may temporarily settle simply for not being what society expects them to be so that they may go on with the search. They want recognition that this search is an important and worthwhile endeavor and they want help, but help with the questions that have meaning for them at a particular stage in their search, not advice about where they should be.

There is little agreement as to the part which a college or university should play in this whole process, either among or within colleges. In pursuing excellence, many institutions seem to have defined excellence in a way that parallels the definition of society; in terms of numbers of Ph. D.'s on the faculty, quantity and quality of faculty scholarship and research, number of research grants, number of Nobel laureates and members of a National Academy, number of students who go on to graduate and professional study. These assets are not to be underestimated; they can contribute directly to important and relevant education. But is this all? For many institutions, the problem may be that they have not clearly thought through the implications of the distinction between education and training made by Sanford. "True education is liberating and differentiating. If it is successful it makes every individual different from every other * * *. Training tends to process individuals so that they are more alike, speaking the same language, sharing the same professional baggage, engaging in the same kinds of activities in the same more or less prescribed way."[5] The two would seem to have very different implications for curriculum, for evaluation, for posture with reference to the interests and concerns of students. Is the purpose of the institution training for a specific role in the economy, broadly defined, or is it self-realization, including preparation for a broadly defined role in society? This is not necessarily an either-or proposition. It is possible to do one while concentrating on the other but the implications of this dual role need to be clear. If the main goal is at the training end of the continuum, the subsidiary goal, if it is to be viable, must be accepted and supported by those whose main concern is scholarship and training. Is education, defined as awareness, attitude, style, approach, frame of mind, to be planned for or is it just supposed to happen? Is concern for the realization of uniqueness and individuality reflected in classroom, curriculum, and housekeeping, even when it is secondary, or is there only lipservice to this goal?

It is conceivable that serious attention paid to some of the non-intellectual needs felt by students, which are not always accurately reflected in what they say they want, could pay great dividends both now and in the future. Preoccupation with problems of growing can seriously interfere with progress in training. In this age of almost universal expectation for higher education, it may not be enough to assume that if these problems are sufficiently major to interfere with progress in what is often considered main business of higher education, the student does not belong in college. For some institutions this may be a tenable solution; for all institutions it probably is not.

Robert Nixon,[6] a psychiatrist specializing in the study of late adolescence, has thought through some of the ways in which these three factors, youth, the culture, and the educational institution, are interrelated and the implications of these interrelationships for the growth of the young person. According to Nixon, the late adolescent should be entering the cognitive stage of development, a stage characterized by questioning and rethinking all of one's past development. Youth examines his past history for unfinished business, gaps left in every person's life as a result of the imperfect resolution of tasks peculiar to a particular stage of development. Not only these gaps but all aspects of his identity, and the values, attitudes, and behaviors which are a part of that identity, are subjected to close scrutiny. Those aspects of the identity which do not fit with what he feels he is now or with what he hopes to become are abandoned and he experiments with new attitudes, values, and behaviors to take their place. This whole process of reexamination and experimentation necessarily involves anxiety—anxiety aroused by letting go of old ways before new ones are available. Nixon believes that anxiety is essential to growth yet our society feels that anxiety is bad, something to be avoided, to be conjured away with drugs, both in oneself and in others. For most young people, although they experience at least a taste of the questioning that characterizes this stage, the anxiety seems too great to bear and they retreat to the previous stage of unquestioning acceptance of the status quo. We of the older generation are so wary of our own anxiety that we have been able to teach them almost nothing about theirs, so few of them can tolerate the pain of growth. For the majority, then, the cognitive stage becomes the graveyard of psychological growth.[7]

Not only does society dislike anxiety, it also dislikes being questioned. So many of the values and attitudes which made up the identity of the precognitive adolescent were the values and attitudes of the parents as representatives of society. A reexamination of the identity leads to a reexamination of the parents, which generates anxiety in them. The simplest solution for all concerned would seem to be to stop the questioning, thereby relieving the anxiety. But this solution also leads to the psychological graveyard.

It would seem that educational institutions are in a position to play an important supportive role in the student's development during this stage. Where better can they be taught the relationship between anxiety and growth, and where else are they supposed to be systematically encouraged to ask their questions, to examine critically this world we share? Those of us engaged in formal education of the late adolescent have at hand an opportunity to foster growth that is almost nonexistent elsewhere in this society. That we use it so little, and misuse it so much, is not to our credit as educators and in all probability contributes more than we like to think to the discontent of the youthful generation.[8]

As will be suggested in a later chapter, decisions, whether implicit or explicit, about the proper role and function of the educational institution determine to a great extent the nature and level of educational effort directed to a variety of important but controversial problems or issues, not the least of which is drug use.

Notes

[1] Blum, R. H., "Nature and Extent of the Problem." *NASPA Drug Education Project Background Papers*, p. 5, 1966.

[2] Wahl, C. W., "Diagnosis and treatment of Status Medicamentosis." *Dis. Nerv. Syst.*, 1967, *28*, 318–322.

[3] Louria, Donald, "Nightmare Drugs." New York: Pocket Books, Inc. (No. 10157), 1966, pp. 76–77.

[4] Keniston, K., "Drug Use and Student Values." *NASPA Drug Education Project Background Papers*. See also Keniston, K., *The Uncommitted: Alienated Youth in American Society*. New York: Delta, 1967 (paperback No. 92737).

[5] Sanford, R. N., *Self and Society*. New York: Atherton Press, 1964, p. 41. See also, Sanford, R. N., *Where Colleges Fail*. San Francisco: Jossey-Bass, 1967.

[6] Nixon, R. E., "Psychological normality in adolescence." *Adolescence*, 1966, *1*, 211–223. See also, Nixon, R. E., *The Art of Growing*. New York, Random House, 1962 (paperback No. PP23).

[7] Nixon, R. E., ibid., pp. 219–220.

[8] Ibid., p. 222.

IV. DRUGS AND THE LAW

A consideration of drugs and the law requires both a description of the laws enacted to control the use of drugs and an examination of some of the many assumptions, both implicit and explicit, which are basic to the laws. To describe the legal status of controlled drugs is not simple, for it involves two sets of Federal laws, two Federal enforcement agencies, the laws of 50 States with corresponding enforcement agencies, as well as innumerable local ordinances and personnel for enforcing them. Not only do the laws and the penalties provided by them vary from State to State but in many instances the State laws differ both in content and in spirit from the Federal laws. The assumptions on which the laws are based are even more controversial and difficult to describe; however, they are of increasing concern to many students.

It is not possible to consider State laws in any detail in this report but it is extremely important for each institution to become thoroughly familiar with the laws of the State and the ordinances of the city in which it is located. It is most desirable that these be made clear to students, even though doing so may create a furor among some and pained boredom in others and convince the community that some crisis has occurred. These are facts of life and, like or dislike, approve or disapprove, they represent present reality. State and local laws are particularly important because Federal enforcement personnel are so relatively small in number that most enforcement at the local level is by local and State police acting under local and State law.

State laws relating to dangerous drugs vary widely both in terms of the drugs covered and of the penalties invoked. State laws regarding marihuana follow, in general, those applying to narcotics. Indeed some States have officially defined marihuana as a narcotic.

Much State legislation follows the Uniform Narcotics Act, a model suggested by the Federal Bureau of Narcotics, or the Model Drug Abuse Control Act recommended by the Food and Drug Administration. Both of these documents went beyond the actual legislation regarding either marihuana or dangerous drugs, particularly with reference to criminal penalties for possession and use. Although, under Federal law marihuana is not considered a narcotic (see quote from Miller below), the States, following the recommendations of the Uniform Narcotic Drug Act, have defined it as a narcotic. Federal law since the 1951 Boggs amendment and the Narcotic Drug Control Act of 1956, while still not defining marihuana as a narcotic, extended the provisions of both of these laws to include marihuana.

State penalties for marihuana violations are often very severe. Penalties for first offense for possession and sale vary from 2 to 20 years and fines up to $20,000. Second offenses carry penalties up to 30 years.

It is urgent that college administrators acquaint themselves with all of the State and local provisions relating to possession, use and sale of all controlled drugs. It is common practice for Federal agents to involve State and local agents in their investigations and to urge prosecution under State and local regulations, which in many instances are more severe than Federal regulations.

Before either the laws or the assumptions on which they are based can be examined profitably, two important terms, "narcotic" and "addiction," need to be clarified. Until passage in 1965 of the Drug Abuse Control Amendments to the Federal Food, Drug, and Cosmetic Act the Federal legislation controlling drugs was primarily limited to narcotic drugs and marihuana. Narcotic drugs were defined as opium, its alkaloids and derivatives (principally morphine and heroin), the coca leaf and its principal derivative, cocaine, and a specific class of synthetic opiumlike drugs, major among which are meperidine (Demerol) and methadone and their modified forms. These synthetic drugs are dissimilar to or only remotely resemble morphine in chemical structure but they produce many pharmacological effects similar to those of morphine. These pharmacologically diverse drugs were all put in one general class (narcotics) because they were considered to be addictive, whether in the sense of being habit forming or in the sense of producing physical dependence.

Both the term "narcotic" and the term "addiction" have acquired so much surplus meaning beyond the pharmacological or medical facts that their use fosters much confusion and unwarranted debate. They are best abandoned, but this is wishful thinking since they are so deeply entrenched in popular and legal discourse. It is necessary either to avoid both terms in discussion with students or, if used, to define them carefully.

Pharmacologically the term "narcotic" is applied to a drug which, in most people under most circumstances and at appropriate dose levels, produces sleep and stupor, relieves pain and changes mood, although there is some disagreement about the analgesic requirement for classification as a narcotic. From a legal standpoint, use of the term "narcotic" has unfortunately been extended and applied to almost any drug presumed to be habit forming or addicting. The layman has gone even further, using the term to refer to any drug which is socially disapproved or associated with delinquency, crime, and the underworld, as well as to any drug controlled by the Federal Bureau of Narcotics.

For example, cocaine, quite in contrast to opium and its derivatives, is a stimulant and is never classed pharmacologically as a narcotic. Furthermore, neither tolerance nor physical dependence develops and there is no characteristic abstinence syndrome on abrupt withdrawal of cocaine.[1] One may, however, develop strong psychological dependence on this drug, and depression, fatigue, and delusions may persist for some time after withdrawal. This is an example of a drug which, although it is not pharmacologically a narcotic and does not produce physiological dependence or tolerance, is legally classified as a narcotic because it may produce psychological dependence and, in some individuals, has been associated with aggressive and assaultive behavior.

In contrast to the term "narcotic," which has acquired a useful definition in the science of pharmacology, the term "drug addiction" has acquired so many different meanings that even the pharmacologist no longer attempts to develop a specific definition for the term. Jaffe says, "It is possible to describe all known patterns of drug abuse without employing the terms 'addict' or 'addiction.' In many respects this would be advantageous, for the term 'addiction' has been used in so many ways that it can no longer be employed without further qualification or elaboration." [2] In 1965, after careful study, the World Health Organization Expert Committee on Addiction Producing Drugs [3] came to a similar conclusion and recommended substitution of the term "drug dependence" for that of "drug addiction." They also concluded that since it is unsound to maintain a single definition of drug dependence for all drugs, it is essential to specify which type of drug is involved in the dependence; thus, they define drug dependence of the morphine type, of the barbiturate-alcohol type, of the cocaine type, of the cannabis type, of the amphetamine type, of the khat type, and of the hallucinogen (LSD) type. Each of these drugs has a different potential for dependence. For each type of actual dependence, the authors present a profile based on five characteristics: Psychological dependence, physical dependence, tolerance, harm to the individual, and harm to society. These profiles clearly show that these five characteristics vary greatly in importance among the different types of dependence. For example, in some types there is little or no physical dependence while in others this is a primary characteristic.

The WHO report is extremely important in providing a terminology and a procedural model for clearer thinking about dependence on existing drugs and for dealing with new drugs, with new profiles, as they appear. The authors do not express much hope that this terminology, which is congruent with modern scientific thought, will rapidly supplant older terms like addiction, with their potential for inaccuracy, confusion and misunderstanding. It seems that the college campus should be among the first forums in which this terminology is adopted; our limited experience suggests that to do so does improve communication and the credibility of the communicator.

Another important fact about drug dependence is the finding that individuals differ greatly both in their tendency to repeat a particular drug experience and in their tendency to become dependent on the drug. The fact is a familiar one in the use of alcohol. In this connection, Jaffe says, "In the case of alcohol, it seems obvious that the effects of the drug per se do not compel a normal individual to use the drug repeatedly, and we readily accept the idea that social and psychological factors play major roles in the abuse of alcohol. It is sometimes erroneously assumed that opiates and related narcotics are different, that they regularly produce such pleasurable effects (euphoria) that it is difficult to avoid repetitive use."[4] Brill reports that "Careful inquiry indicates that not all who try heroin become addicted"[5] and Hoch asks, "Why is it that out of every 100 individuals who experiment with narcotics ("joy-pop" in the argot of the addict) only a relatively small percentage become addicted?"[6] It appears that no known drug has effects which in and of themselves compel a normal individual to use them repeatedly. In other words, as with alcohol, we have to discover and identify for each drug the social and psychological factors which deter or facilitate repetitive use and the development of dependence.[7] The results of research efforts to understand these factors are widely published and are important in any discussion of dependence, alcoholism, and addiction.

The purpose of the preceding discussion was to clarify two important terms which are relevant to any discussion of the legal status of drugs. We turn now to a consideration of some of the laws enacted for the control of drugs.

A description of the Federal laws is perhaps best presented in excerpts from NASPA Drug Education Project Background Papers by Donald E. Miller, Chief Counsel, U.S. Bureau of Narcotics and Paul A. Pumpian, formerly Assistant to the Director of the Bureau of Drug Abuse Control. We begin with excerpts from Mr. Miller's paper.

> The responsibilities of the Bureau of Narcotics as established by Congress relate to opium, its alkaloids and derivatives; the coca leaf and its principal derivative, cocaine; the plant Cannabis sativa L., otherwise known as marihuana; and a specific class of synthetics called opiates, such as Demerol and methadone.
>
> In 1914, Congress enacted the Harrison Narcotic Drug Act, the forerunner of the law which is now incorporated in the Internal Revenue Code. This legislation was followed by the Import and Export Acts of 1914 and 1922; the act of June 7, 1925, barring the importation of crude opium for the purpose of manufacturing heroin; the Uniform Narcotic Drug Act approved in 1932; the Marihuana Tax Act of 1937; the Opium Poppy Control Act of 1942; an act to control synthetic narcotic drugs in 1946; the Narcotic Control Act of 1956 and the Narcotics Manufacturing Act of 1960.
>
> The Harrison Narcotic Act (26 U.S.C. 4701 et seq.) provides the machinery through which the Bureau is able to exercise control over the distribution of narcotic drugs within the country. Registration and payment of a graduated occupational tax by all persons who import, manufacture, produce, compound, sell, deal in, dispense, or give away narcotic drugs is required. A commodity tax at the rate of 1 cent per ounce or fraction thereof is imposed upon narcotic drugs produced in or imported into the United States and sold or removed for consumption or sale. Sales or transfers of narcotic drugs are limited generally to those made pursuant to an official order form which may be secured (in blank) by registrants from the district director of internal revenue.
>
> Exception from the order form requirement is made in the dispensing to a patient by a qualified practitioner in the course of his professional practice only, and in the sale by a druggist to or for a patient, pursuant to a lawful written prescription issued by a qualified practitioner.
>
> The Narcotic Drugs Import and Export Act (21 U.S.C. 171–185) authorizes the importation of such quantities only of crude opium and coca leaves as the Commissioner of Narcotics shall find to be necessary to provide for medical and legitimate (scientific) needs. Importation of any form of narcotic drug except such limited quantities of crude opium and coca leaves is pro-

hibited. The importation of smoking opium or opium prepared for smoking is specifically prohibited. Likewise, the importation of opium for the manufacture of heroin is prohibited. Exportation of manufactured drugs and preparations is permitted under a rigid system of control designed to assure their use for medical needs only in the country of destination.

The Marihuana Tax Act (21 U.S.C. 4741 et seq.) also requires registration and payment of a graduated occupational tax by all persons who import, manufacture, produce, compound, sell, deal in, dispense, prescribe, administer, or give away marihuana. No commodity tax is imposed on this drug. However, a tax is imposed upon all transfers of marihuana at the rate of $1 per ounce or fraction thereof, if the transfer is made to a taxpayer registered under the act, or at the rate of $100 per ounce, if the transfer is made to a person who is not a taxpayer registered under the act. Transfers are also limited generally to those made pursuant to official order forms obtainable from the district director of internal revenue. Exceptions from the order-form and transfer-tax requirement are made in dispensing to a patient by a qualified practitioner in the course of his professional practice only, and in the sale by a druggist to or for a patient, pursuant to a lawful written prescription issued by a qualified practitioner. The act is designed to make extremely difficult the acquisition of marihuana for abusive use and to develop an adequate means of publicizing dealings in marihuana in order to tax and control the traffic effectively. The imposition of a heavy transfer tax has been held to be a legitimate exercise of the taxing power despite its collateral regulatory purpose and effect.

The Opium Poppy Control Act (21 U.S.C. 188–188n) was approved December 11, 1942. The opium poppy, as the source of opium, is therefore the source of opium derivatives such as morphine, heroin, and codeine. The act prohibits the production in the United States of the opium poppy, except under license, and the issuance of a license is conditioned upon a determination of the necessity of supplying by this means the medical and scientific needs of the United States for opium and opium products. No such necessity has arisen, nor is it likely to arise. Consequently, no license has been issued under the act, and it is unlikely any will be issued in the future.

The Narcotics Manufacturing Act of 1960 (21 U.S.C. 501) provides for a system of licensing and establishment of manufacturing quotas for all narcotic drug manufactures, with appropriate safeguards, with respect to the manufacture of the basic classes of narcotic drugs, both natural and synthetic, for medical and scientific purposes. Provision is made to give full effect to treaty provisions and obligations of the United States to limit exclusively for medical and scientific purposes the manufacture of narcotic drugs and to require that such manufacture be restricted to persons and premises that have been licensed for this purpose. Equitable assignment of quotas and the adjustment of these quotas are provided for in the act and are based upon the amount of each narcotic drug found to be necessary to supply medical and scientific needs.

The Uniform Narcotic Drug Act (Anslinger and Thompson, "The Traffic in Narcotics," Funk & Wagnalls, p. 318) or similarly acceptable legislation is in force in all of the States. The Federal laws were never enacted as the only controls necessary over the illicit narcotic drug traffic. It has always been contemplated that the authorities of the States will accept and discharge the primary responsibility of investigating, detecting, and preventing the local illicit traffic conducted by the retail peddler, together with the institutional care and treatment of drug addicts within their respective jurisdictions.

The act prohibits any person from manufacturing, possessing, selling, purchasing, prescribing, administering, or giving away any narcotic drug except as authorized by the act. Provisions are made for licensing of manufacturers

> and wholesalers as well as setting forth the classes to which and the manner in which narcotic drugs may be sold or dispensed.
>
> Similar to the Federal law, the act restricts the legitimate traffic to qualified manufacturers, wholesalers, drugstores, practitioners, and researchers. Narcotics may be sold only pursuant to narcotic order forms, or prescriptions; pharmacists may fill prescriptions issued by doctors; pharmacists may sell certain exempt preparations without a prescription; and physicians may either dispense to or prescribe narcotics for patients in the course of professional treatment. Records must be maintained and be open to inspection.
>
> The controls over marihuana under the Federal and State laws are dissimilar. Under the Federal laws, the Marihuana Tax Act of 1937 placed the same type of controls over marihuana as the Harrison Narcotic Act of 1914 placed over narcotic drugs.
>
> On the other hand, the States have covered marihuana within the definition of narcotic drug since adoption of the Uniform Narcotic Drug Act of 1932. Legally, marihuana is not considered a narcotic drug under the Federal law, but it is considered a narcotic under the State laws. * * * The Supreme Court of Colorado has ruled it is perfectly permissible to define marihuana as a narcotic drug (*Colorado* v. *Stark et al.*, No. 21394, Apr. 12, 1965).[8]

It should also be noted that there are two other Federal acts relevant to the control of narcotic drugs (including marihuana), the Boggs amendment of 1951, and the Narcotic Drug Control Act of 1956. The Report of the President's Commission on Law Enforcement and the Administration of Justice comments on these as follows:

> Federal law was changed twice during the last decade. In 1951, following the post-World War II upsurge in reported addiction, mandatory minimum sentences were introduced for all narcotic and marihuana offenses, 2 years for the first offense, 5 years for the second, and 10 years for third and subsequent offenses. At the same time, suspension of sentence and probation were prohibited for second offenders. In 1956 the mandatory minimum sentences were raised to 5 years for the first and 10 years for the second and subsequent offenses of unlawful sale or importation. They remained at 2, 5, and 10 years for the offense of unlawful possession. Suspension of sentence, probation, and parole were prohibited for all but the first offense of unlawful possession. Many State criminal codes contain comparable, though not identical, penalty provisions.
>
> In support of existing mandatory minimum sentences for narcotics violations, it has been suggested that the high price and low quality of the heroin available on the street and the fact that serious physical dependence on the drug has become a rarity are evidence that there are fewer people willing to face the risk of more severe penalties. On the other hand, with respect to heroin, it has been noted that these trends preceded the pattern of mandatory minimum sentence provisions. And despite the application of such sanctions to marihuana, the use of and traffic in that drug appear to be increasing.
>
> Since the evidence as to the effects of mandatory minimum sentences is inconclusive, the Commission believes that the arguments against such provisions, which appear in chapter 5, are a firmer basis upon which to rest its judgment in this case.
>
> Within any classification of offenses, differences exist in both the circumstances and nature of the illegal conduct and in the offenders. Mandatory provisions deprive judges and correctional authorities of the ability to base their

> judgments on the seriousness of the violations and the particular characteristics and potential for rehabilitation of the offender.
>
> There is a broad consensus among judges and correctional authorities that discretion should be restored. A 1964 policy statement of the Advisory Council of Judges and repeated testimony by officials of the Bureau of Prisons and Board of Parole are expressions of this consensus.
>
> In its recommendations on mandatory minimums, the President's 1963 Advisory Commission sought to avoid the evils of treating all narcotics and marihuana offenders alike by dividing offenses into four groups:
>
> > The smuggling or sale of large quantities of narcotics or the possession of large quantities for sale. This would subject the offender to mandatory minimum sentences. Probation, suspension of sentence and parole would be denied.
> >
> > The smuggling or sale of small quantities of narcotics, or the possession of small quantities for sale. This would subject the offender to some measure of imprisonment but not to any mandatory minimum terms. Suspension of sentence would not be available but parole would.
> >
> > The possession of narcotics without intent to sell. The sentencing judge would have full discretion as to these offenses.
> >
> > All marihuana offenses. The sentencing judge would have full discretion.
>
> This Commission believes that these gradations as to the seriousness of offense are sound in principle. But, for the reasons set forth above and in the discussion in chapter 5 on sentencing, it does not believe they should be rigidified into legislation. Rather, judges and correctional officials should be relied on to take account of the nature of the offense and the record and status of the offender in making their decisions.[9]

Until passage of the drug abuse control amendments in 1965 control of drugs other than narcotics was primarily by means of prescriptions, with certain drugs, presumably safe for self-prescription, available with proper warnings on the label. Primarily because of the diversion of many prescription drugs from controlled channels and because many were written without limits on refill, abuse was judged to be sufficiently widespread to require legal controls. In this venture into drug control the Federal Government met the issue directly and did not attack it indirectly through tax legislation. It concentrated its control on the manufacture and distribution of depressant, stimulant, and, by further amendment, hallucinogenic drugs. Although it makes possession of any of these drugs illegal, except as obtained through prescription for personal use, it does not make illegal possession a criminal offense. It does, however, make those who sell, deliver or otherwise dispose of any of the controlled drugs liable for criminal prosecution. Many States legislatures, reverting to the pattern established by the Uniform Narcotic Act, the Boggs amendment and the Narcotic Drug Control Act have enacted legislation to attach criminal penalties to possession of controlled drugs especially the hallucinogens.

The provisions of the drug abuse control amendments are described by Mr. Pumpian in the NASPA Background Paper, "The Food and Drug Administration and the Drug Abuse Control Amendments" as follows:

> Those of you who have been following the drug abuse problem realize that it is not of recent vintage. As you know, the Congress has considered legislation to more adequately control depressant and stimulant drugs since 1950. National attention was focused on the drug abuse problem in 1962 with the convening of the White House Conference on Narcotic and Drug Abuse. Following that, President Kennedy appointed a Commission on Narcotic and Drug Abuse to further study the problem and consider the material that was presented at the White House Conference. In 1963, the Commission submitted their report which contained a number of recommendations, one of which was that all nonnarcotic drugs capable of producing serious psychotoxic effects when abused be brought under strict control by Federal statute.
>
> Early in 1965 H.R. 2 was passed by the Congress and on July 15 was signed into law. It is known as the Drug Abuse Control Amendments of 1965 (Public Law 89–74) and became effective February 1, 1966. This legislation provided special controls for depressant and stimulant drugs. It required the registration of manufacturers and distributors of these drugs, on an annual basis. Recordkeeping by manufacturers and distributors of the depressant and stimulant drugs as well as by pharmacies and dispensing physicians is also required; specifically, a record is to be made of the depressant and stimulant drugs on hand on the date of control, to be retained for 3 years, and a record of all purchases and sales of these drugs is also to be retained for a period of 3 years.
>
> The provision that may be of interest to you as consumers is the refill limitation provision. Up until this time prescriptions for drugs could be refilled without limitation if authorized by a physician. The drug abuse control amendments provide that controlled drugs may not be refilled more than five times, nor for more than a period of 6 months without specific authorization of the *prescriber obtained subsequent* to the expiration of the 6-month period or after the fifth refill has been used. Prior to this time a physician could write the letters "p.r.n." on a prescription, which means the prescriptions could be refilled whenever the patient felt it to be necessary.
>
> Depressant and stimulant drugs are defined in the law as:
>
> (1) any drug which contains any quantity of
> - (*a*) barbituric acid or any of the salts of barbituric acid; or
> - (*b*) any derivative of barbituric acid which has been designated by the Secretary as habit forming;
>
> (2) any drug which contains any quantity of
> - (*a*) amphetamine or any of its optical isomers;
> - (*b*) any salt of amphetamine or any salt of an optical isomer of amphetamine; or
> - (*c*) any substance which the Secretary, after investigation, has found to be, and by regulation designated as, habit forming because of its stimulant effect on the central nervous system;
>
> (3) any drug which contains any quantity of a substance which the Secretary, after investigation, has found to have, and by regulation designates as having, a potential for abuse because of its depressant or stimulant effect on the central nervous system or its hallucinogenic effect. * * *
>
> * * * section three of the definition includes any drug which the Secretary has found and designates by regulation as having a potential for abuse be-

> cause of a depressant or stimulant effect on the central nervous system or a hallucinogenic effect.
>
> The mechanism of controlling drugs by regulation is that drugs believed to have a potential for abuse are considered by an advisory committee to the Food and Drug Administration. If the committee agrees that these drugs have a potential for abuse and should be controlled, they so advise the Commissioner of the Food and Drug Administration. They are then controlled by regulation * * *.
>
> The depressant and stimulant drugs (with the exception of the hallucinogens) are available on prescription. There is a legitimate medical use for these drugs; they are available for such use and have been so available for many years. However, because of their potential for abuse, they are subject to the provisions previously mentioned.
>
> The hallucinogens, however, are available only to qualified investigators approved by the Food and Drug Administration and subject to an investigational new drug application. By qualified investigators we do not mean students who are making hallucinogenic drugs in their chemistry laboratories or in their roominghouses. Since these drugs are not available for student use, their possession of these drugs can result in seizure of the drugs by our agents, although the students cannot be prosecuted for illegal possession if they were not selling the drug.
>
> The penalties for violation of the law are not as severe as they might be. The first offense is a misdemeanor. Conviction subjects one to imprisonment for not more than 1 year or a fine of not more than $1,000, or both. A second offender may be imprisoned for up to 3 years or subjected to a fine of not more than $10,000.
>
> The one exception, however, is sale to a minor. The law provides:
>
>> That any person having attained his 18th birthday, who sells, delivers or otherwise disposes of any depressant or stimulant drug to a person who has not attained his 21st birthday shall be subject to imprisonment for not more than 2 years or a fine of not more than $5,000, or both, and for a second or subsequent convictions shall be subject to imprisonment for not more than 6 years or a fine of not more than $15,000, or both.
>
> The law also provides that no person shall possess any depressant or stimulant drug otherwise than "for the personal use of himself or a member of his household," which means that a person apprehended with a drug in his possession is subject to no criminal sanctions until it can be proven that this drug was for the purpose of sale or distribution to others. The drug can be confiscated, but the person cannot be prosecuted for possession. It is apparent that the drug abuse control amendments are aimed at the peddler, not the possessor."[16]

Not only laws but the regulations for implementation of a law are often of great importance in understanding the impact of the law on society. Included here is one portion of the regulations under the Food, Drug, and Cosmetic Act pursuant to depressant and stimulant drugs. It is urged that these regulations be included in any background materials for those seeking to prepare themselves to work actively with students.

This section of the regulations is included here to indicate that provisions of the Drug Abuse Control Act of 1965 enable the Commissioner of the Food and Drug Administration, on recommendation of an advisory committee selected by FDA from a list of experts nominated by the National Academy of Sciences, to apply provisions of the act to drugs not presently controlled. In section 166.2 the criteria for stimulant, depressant, and hallucinogenic drugs are specified:

(§ 166.2)

January 27, 1966 PART 166—Page 2

DEPRESSANT AND STIMULANT DRUGS

§ 166.2 Criteria applicable to terms used or defined in § 166.1.

(a) In determining whether a drug has a "stimulant effect" on the central nervous system, the Commissioner will consider, among other relevant factors, whether there is substantial evidence that the drug may produce any of the following:

(1) Extended wakefulness.

(2) Elation, exhilaration, or euphoria (exaggerated sense of well-being).

(3) Alleviation of fatigue.

(4) Insomnia, irritability, or agitation.

(5) Apprehension or anxiety.

(6) Flight of ideas, loquacity, hypomania, or transient deliria.

(b) In determining whether a drug has a "depressant effect" on the central nervous system, the Commissioner will consider, among other relevant factors, whether there is substantial evidence that the drug may produce any of the following:

(1) Calming effect or relief of emotional tension or anxiety.

(2) Drowsiness, sedation, sleep, stupor, coma, or general anesthesia.

(3) Increase of pain threshhold.

(4) Mood depression or apathy.

(5) Disorientation, confusion, or loss of mental acuity.

(c) In determining whether a drug is "habit forming," the Commissioner will consider, among other relevant factors, whether there is substantial evidence that the drug may produce any of the following:

(1) A psychological or physical dependence on the drug (compulsive use).

(2) Euphoria (exaggerated sense of well-being).

(3) Personality changes.

(4) Transient psychoses, deliria, twilight state, or hallucinoses.

(5) Chronic brain syndrome.

(6) Increased tolerance or a need or desire to increase the drug dosage.

(7) Physical dependence or a psychic dependence evidenced by a desire to continue taking the drug for the sense of improved well-being that it engenders.

(8) Pharmacological activity similar or identical to that of drugs previously designated as habit forming.

(d) In determining whether a drug has a "hallucinogenic effect," the Commissioner will consider, among other relevant factors, whether there is substantial evidence that it may produce hallucinations, illusions, delusions, or alteration of any of the following:

(1) Orientation with respect to time or place.

(2) Consciousness, as evidenced by confused states, dreamlike revivals of past traumatic events, or childhood memories.

(3) Sensory perception, as evidenced by visual illusions, synesthesia, distortion of space and perspective.

(4) Motor coordination.

(5) Mood and affectivity, as evidenced by anxiety, euphoria, hypomania, ecstasy, autistic withdrawal.

(6) Ideation, as evidenced by flight of ideas, ideas of reference, impairment of concentration and intelligence.

(7) Personality, as evidenced by depersonalization and derealization, impairment of conscience and of acquired social and cultural customs.

(e) The Commissioner may de-

> termine that a substance has a potential for abuse because of its depressant or stimulant effect on the central nervous system or its hallucinogenic effect if:
>
> (1) There is evidence that individuals are taking the drug or drugs containing such a substance in amounts sufficient to create a hazard to their health or to the safety of other individuals or of the community; or
>
> (2) There is significant diversion of the drug or drugs containing such a substance from legitimate drug channels; or
>
> (3) Individuals are taking the drug or drugs containing such a substance on their own initiative rather than on the basis of medical advice from a practitioner licensed by law to administer such drugs in the course of his professional practice; or
>
> (4) The drug or drugs containing such a substance are new drugs so related in their action to a drug or drugs already listed as having a potential for abuse to make it likely that the drug will have the same potentiality for abuse as such drugs, thus making it reasonable to assume that there may be significant diversions from legitimate channels, significant use contrary to or without medical advice, or that it has a substantial capability of creating hazards to the health of the user or to the safety of the community.

The assumptions underlying and implicit in these two sets of Federal law raise a number of broad social issues, issues which extend, in many instances, far beyond the drug problem. They are of concern not only to those students who do use drugs but also to those who are involved with any of a variety of current social issues, such as Vietnam, the draft, civil rights, student rights. It is appropriate here only to identify some of these issues and to underline the fact that many of them are not peculiar to the drug problem.[11]

Some of these issues have been identified by Blum:

☐ Does a person have the right to choose to use a powerful drug to seek some personal or social purpose when there is no approved medical reason for what he does?

☐ May a man seek pleasure through means disapproved as long as no one else is harmed? May he play while others work * * *?

☐ Is it the will of God that the flesh not be fulfilled?

☐ What kinds of bad effects must occur in what proportion of persons using a drug before a decision is made that the drug must be controlled or outlawed? When a person is defined as being ill and is being cared for by a doctor? When drugs are used not to treat agreed-upon illness but are employed privately or socially? Who has the responsibility for determining the criteria by which risk is evaluated?

☐ Does a man have the right to * * * glorify inner experience and become disinterested in the world of other men?

☐ Do those who prefer moderation, control, and foresight have the right to outlaw the search for and enjoyment of intense experience?

Following Blum's lead, certain other questions can be raised:

☐ If people take drugs for other than approved medical reasons, are they automatically sick, either psychologically or socially?

☐ Given our pluralistic society and our changing values and standards, who defines health and who defines pathology?

☐ Should mental health be defined as adapting to the status quo or does it also include working and in some cases fighting for change?

☐ Is criminal treatment of the dissatisfied ever warranted except when it can be demonstrated as necessary for the protection of society or other individuals?

Many other issues being questioned under the banner of the drug problem should be recognized as issues of broad social concern and should be debated as such. Among these we note:

☐ The morality and legality of laws based on assumptions which may no longer be valid, and the proper response of the individual to such laws.

☐ The philosophy of social control implicit in drug legislation which makes mere possession of a potentially dangerous substance a crime with penalties in some cases equivalent to those for such criminal acts as grand larceny and second degree murder. The application of such a philosophy to drugs but not to alcohol, guns, cars, and insecticides which, in point of fact, can be demonstrated to have caused more harm to more people than all of the controversial drugs combined.

☐ The philosophy of social control which assumes that increasingly severe criminal penalties are the most effective way of controlling unacceptable behavior.

☐ The assumption that legislation and criminal sanctions are the only effective means by which society can indicate disapproval.

☐ The appropriateness of government specification of universally applicable mandatory sentences and the legislation of eligibility for suspension of sentence and parole, given the innumerable dimensions on which individuals vary. The important question of punishment versus rehabilitation as the basis for sanction.

☐ The extent to which society through its laws has a right to control areas of activity which involve actions which lead only to changes within the individual. Who should decide this?

- ☐ The assumption by some government agencies and a large segment of the general public that a college is responsible for investigating and reporting information to enforcement agencies on student activities which are considered by some not to fall within the educational responsibilities of the institution.

Most of these issues are already abroad in the land in one guise or another. They are not unique to students or to the campus; they are not unique to drugs and drug use; they are relevant to many problems. A balanced discussion of drug use requires explicit recognition of their relevance; if left implicit, they make it difficult to evaluate fairly even the most relevant facts about drugs and the possible risks involved in drug use. They are important social issues with broad implications and they should not be ignored. Conclusions regarding them should go a long way in helping us to deal sensibly with drug issues.

Notes: Drugs and the Law

[1] Eddy, N. B. et al., "Drug Dependence." *Bull. World Health Org.*, 1965, 32, p. 728.

[2] Jaffe, J. H., "Drug addiction and drug abuse." In Goodman and Gilman (editors), *The Pharmacological Basis of Therapeutics* (3d edition), New York, Macmillan, 1965, p. 286.

[3] Eddy et al., op. cit.

[4] Jaffe, J., op. cit.

[5] Brill, H., "Misapprehensions about drug addiction: Some origins and repercussions." *Compr. Psychiat.*, 1963, 4, p.

[6] Hoch, P. H., "Comments on narcotic addiction." *Compr. Psychiat.*, 1963, 4, p. 143.

[7] Ausubel, D. P., "Some future directions for research in adolescent drug addiction." *Adolescence*, 1966, *1*, 70–78.

[8] Miller, D. E., "Narcotic drug and marihuana controls." *NASPA Background Paper*, pp. 1–3.

[9] Report of the President's Commission on Law Enforcement and the Administration of Justice. *The Challenge of Crime in a Free Society*. Washington, D.C., U.S. Govt. Printing Office, February 1967, p. 223.

[10] Pumpian, P., "The Food and Drug Administration and the Drug Abuse Control Amendments." *NASPA Background Paper*, pp. 1–4.

[11] Blum, R. H., "Drugs, dangerous behavior, and social policy." Rosenthal, M. P., "Proposals for dangerous drug legislation." *Task Force Report: Narcotics and Drug Abuse*, The President's Commission on Law Enforcement and the Administration of Justice, p. 66–68. See also Blum, R. H., *Utopiates*, New York: Atherton Press, 1964.

V. RESPONSE OF THE EDUCATIONAL INSTITUTION

Educational programs and institutional policies, either formal or informal, are inextricably interrelated. The issues, implicit or explicit, in one can make or break the other. The planning of programs and the formulation of policies both involve difficult decisions and require recognition of the same basic issues. Some of these issues are related to values about which educators disagree. What is the role of the institution with respect to the student's freedom to make decisions in areas outside the curriculum? What are the principles which justify institutional constraints on the student's freedom of choice? On what bases and to what limits does the institution defend the student's decisions? How about his decision to violate the law? Is it the concern of the institution if the student, in deciding to violate the law, is prepared to take the consequences? If the student makes this decision, are sanctions to be applied by society, by the educational institution, or by both? Even among the many values which most educators would endorse there is potential for conflict. To value upholding the law is sometimes in conflict with the belief that experimentation is a necessary part of the growth process in adolescence. For example, is possession of marihuana a signal for initiating criminal prosecution or for exploring with the student the meaning that this unlawful act has for him? Is the decision whether or not to allow a student to continue as a student based only on his level of competence in an academic program or should it also reflect some judgment about his citizenship and level of maturity?

Society is divided on these issues; educational institutions differ on them. From the point of view of both drug education and policy statements about drug use the particular position which is taken is probably less important than that the final position be clear and unambiguous and that it represent the best possible informed consensus among various segments of the institution—of administration, faculty, and students.

Since education is the primary function of the college or university, we will consider educational programs in some detail before returning to the problem of institutional policy statements and their relation to this educational function.

American society has ambivalent attitudes toward education. In principle, it has great faith in education but often, particularly in controversial areas, it is suspicious of the nature and goals of the educational process. Approval of budgets for reading, writing, and arithmetic and for subjects decreed by colleges to be necessary for admission is not the equivalent of endorsement of education as an important process in the solution of social problems. There is skepticism that education can help young people to arrive at the right decisions with respect to social problems; there often seems to be a preference to depend on increasingly punitive laws for their solution. Regardless of one's preference, in a society where population and concentration of population are increasing rapidly, we cannot rely on a corresponding increase in the number of enforcement personnel as the solution to social control. Experience does suggest that an educational approach to social problems may be worth a try, and where better than in an institution in which faith in education should be the highest?

Education means such different things to different people as training, developing personality and character, disciplining, instructing, initiating, cultivating, indoctrinating. Many institutions of higher education are in fact dedicated to the search for knowledge and to the belief that, in the long run, opinions, attitudes, and beliefs based on all available knowledge are the best basis for personal and social action. In contrast, much of the nonacademic world sees education as indoctrination. The one approach assumes that critical examination of beliefs is a necessary precursor to wisdom; the other sees wisdom only in beliefs widely accepted in the past. The one presents many sides of an issue; the other tends to overemphasize one side. College students who have experienced the inquiring approach which is often vigorously fostered in the classroom tend not only to reject efforts based on a one-sided argument but also, in countless situations, to raise questions about issues. Whether awkwardly or incisively formulated, in the classroom, at home, or on the platform, such questions are the necessary, thorny, and sometimes unpalatable products of effective education. We need not wonder that the public often turns to other institutions and other means in the search for the solution of social problems.

Let us also note, however, that educators themselves may be too uncritical in their faith in education, particularly with respect to programs outside the formal curriculum. There is good education and bad education. Good education does not just happen. It requires careful planning, skillful execution, and thoughtful evaluation. Evaluation of educational programs is the exception rather than the rule, and this is particularly true of extracurricular efforts. As we move into such areas as sex education, alcohol education, and drug education, research is desperately needed on the general problem of evaluating results of such programs.

A first step in the evaluation, as well as in the designing of a program, is to identify and select the objectives or goals of the program. Unless specific goals are made explicit, there is no basis for determining what, if anything, the program has accomplished. On topics where social attitudes are vague, inconsistent, divergent, or strongly emotional the specification of goals is a touchy and difficult, but even more necessary, task. It requires sorting out values, noting how specific goals may support or interfere with those of other programs, and bringing out into the open some issues that it is more comfortable to leave unrecognized. It often requires great courage to present the end-product to the students and to society at large.

Education cannot be exclusively confined to planned educational programs. Education goes on every waking moment of every day, whether we choose to label it education or not. Parents are educating by example and by precept, the mass media are educating 7 days a week, schools and colleges educate both in and out of the classroom, seldom standing back to see what they have wrought. We can assume that most of what the student has learned about psychoactive drugs, for example, is based only in small part on information resulting from a formal educational effort and in large part on informal education provided by others and by his own experiences, however limited, with drugs and drug users. There is abundant evidence that the pattern of use of alcohol adopted by the college student, after perhaps a brief period of experimentation, is dependent on or a reaction to his parents' patterns of use.[1] Since society holds conflicting and ambivalent attitudes about drugs and since there are large discrepancies between what is said and what is done, the impact of all this education undoubtedly is to produce confusion and conflicts for the student, even when he chooses to avoid all or most drugs and to believe that he knows little or nothing about them. How can some of the many facets of informal education be improved? Whatever the answer may be, it will necessarily require broad dissemination of information, a task to which drug education in the schools can contribute.

Before discussing educational programs in the general area of drug use, it is appropriate to look at educational efforts involving a specific drug, alcohol. In his recent book, "Where Colleges Fail," Nevitt Sanford presents a helpful analysis of how alcohol education has suffered from society's ambivalent attitudes toward drinking. Even though most States now require some education about alcohol, a very small amount of time is given to such classes, the emphasis tends to be on the physiological effects of alcohol rather than on the patterns of use, the teachers are not well prepared, and the programs are probably ineffective. There is no general agreement on what should be taught. Reluctance and inability to develop strong programs have many sources. Will the program create interest and curiosity where none existed? What should be the goals—abstinence or wise use? Should one teach about different patterns of drinking, about psychological and social factors in drinking, about the diverse consequences of drinking? How does one give a balanced presentation of the facts—most people who drink develop no drinking problems, but some, numbered in the millions, do develop serious problems? Should one spell out the issues in society's ambivalence? If a program confronts the issues in society's ambivalence all kinds of people will be unhappy; if it avoids the issues, the students will be bored. Sanford also points out that how an institution approaches a program of alcohol education, or one in any controversial social problem area, will depend on the educational philosophy of the institution. All of these questions become intensified at the level of the instructor himself. What are his own biases and uncertainties? How do these get communicated to the students? What do his students already believe, feel and do? How can they most effectively be engaged in the alcohol education program? How can good decision making be fostered? Since honesty and open inquiry in the classroom inevitably lead to questions about contemporary attitudes and laws with respect to the use of alcohol, how can these questions be placed in a constructive context? Sanford concludes that alcohol education programs which concentrate on the physiological effects of alcohol are apt to be less effective than those which are concerned with the use and users of alcohol.[2]

Most of the issues discussed by Sanford arise in the area of drug education as well, but with an added twist—most of the drugs in which students are interested are illegal. Many people feel that education in this area should consist simply of saying, "It's against the law—don't do it," and that, since use of psychoactive drugs is currently illegal, it is not open to further question. When any kind of education program is attempted, the issue of the legal status of the drugs and drug users has to be faced.

Obviously, both at the level of the general contribution of education to society and at the level of its contribution with respect to a specific problem, such as alcohol or drug use, there are many important and continuing questions: (1) Should there be a program? (2) What should such a program try to do, and who should decide on the objectives? (3) For whom should such a program or programs be developed? (4) By whom should the program be developed and carried out and what should be in the program?

To educate or not to educate

Many people, including some students, believe that a drug education effort may serve primarily to stimulate interest where no interest exists. This is a frequently expressed attitude toward any educational program which examines controversial social issues. In many individuals anxiety is aroused when attitudes or beliefs about which one is somewhat uncertain are about to be examined. When this attitude also involves a belief that an increase in interest leads to an increase in behavior, in action as well as talk, it raises an interesting question and we know of no data which provide a dependable answer. On the other hand, many hold that in an area of belief or behavior where the young person may be subjected to pressures to do something about which he is unsure, some reliable information is better than none. Furthermore, to learn something about a topic requires some interest in the topic. Finally, experience suggests that what stimulates interest in many students is not the facts about a drug but rather the opportunity to discuss the needs which seem, rightly or wrongly, to be satisfied by drug use. Insofar as this is true, it is then appropriate to discuss the many other more constructive ways of satisfying these needs.

The question of whether or not to educate must also be examined from the viewpoint of present level of interest, since level of interest, level of involvement, and level of information about drugs vary from institution to institution and from group to group within the institution. Thanks to the mass media and to easy mobility and communication among campuses, there are on every campus students with some interest in and some information and misinformation about psychoactive drugs. An institution is wise to assess its own local situation with honesty and candor. This assessment should serve not only to estimate the general level of student interest and involvement but also to identify whatever resources the institution may have for responding helpfully to any expression of interest in information about drugs and drug use, whether from an individual, a small group, or a sizable portion of the campus.

Since students in the same college vary in their interest in drugs, a program will have different appeals to different students. Limited experience at the college level suggests that very few students who do not already have some interest in the topic of drugs attend drug programs. Young people have a knack for seeking out and attending to what is relevant to them at a given time and for ignoring what seems to be irrelevant. Even those with little interest in drugs will attend a Leary lecture out of curiosity and because of his controversial views, his status as an early leader of the drug movement, the prominence given him by the press, and protests which come from the community in response to announcement of the lecture. They, like many others, often have a more negative response to his performance than they had anticipated. The majority of college students seem to be committed to values which are inconsistent with any extensive use of drugs. Just as there are many students who never go to a play, a football game or a concert, there are many who could not care less about a lecture or program on the topic of drugs. This could cease to be the case if the mass media continue to sensationalize drugs and drug users.

In one recent instance, a popular introductory psychology course included three well-attended lectures on drugs and drug use, given by a reputable investigator in the field of psychopharmacology. Later, the students in this large class were given the opportunity to write a term paper on any one of 10 topics. For each topic books representing a variety of points of view were assigned. Only 10 percent of the students chose the topic dealing with drug use and all of these, in writing their papers, came to the conclusion that they were not really interested in trying psychoactive drugs.

At the present time there is no standard or widely accepted model for planning an effective drug education program. This is an area which urgently needs research, development, and demonstration. There are psychological and educational principles which can be adapted to any program, but how effective they are in this area is not really known. Lack of knowledge about the potential effectiveness of a program in drug education has not prevented some institutions from at least trying. Only 44 percent of the participants in the 1967 NASPA drug education conferences reported that their institutions had done nothing in this area. This figure should be interpreted in terms of any selective factors operating in determining conference participation. About 20 percent reported that there had been a public meeting in which one or more positions on drugs and drug use had been presented, another 20 percent said that their institutions had held a series of meetings, discussions or seminars on this topic, and 16 percent came from institutions which had issued policy statements. Most of these educational programs were probably initiated in response to reports of a trend toward increased nonmedical use of drugs and had, at least implicitly, as one objective the reversal of that trend. However, the programs were not set up in such a way that their effectiveness could be evaluated. In the absence of model programs and of evaluation of current efforts, the present discussion can do no more than pose some critical questions which must be faced in planning a program which may stand some chance of being effective.

What kind of educational effort?

Basic questions in any educational effort are "For what? For whom? By whom? and What?" As indicated earlier, the first question involves the identification and selection of objectives. The goal of a drug education program may, for example, be to reduce or eliminate all nonmedical use of drugs by all students, or to persuade primarily those who are heavily committed to drug use to stop, or to provide accurate information and a variety of views about drugs, drug use, and drug users and the meaning of drug use to the individual, in order to assist the student in making wise and rational decisions. Planning the program requires decisions about these and other goals. For some institutions these decisions are very difficult, for others they follow naturally from a long line of decisions already made in other areas. In all institutions they have immediate and important implications, as many schools have already learned through the vigor of local and even national response to a public announcement of a drug education program or of a policy statement about drug use. It takes only days, not weeks, for related issues to become painfully apparent: The role of the school in society, academic freedom, definition of education, the right of privacy, crimes without victims, double jeopardy, in loco parentis, the proper administration of discipline, the responsibility of the institution vis-a-vis outdated and idiotic laws, which may or may not be either outdated or idiotic, the limits and jurisdiction of the institution and of the Government, the philosophy of social control of the individual, the small group or the larger society. All kinds of people, organized and unorganized, have all kinds of positions, opinions, and attitudes on each of these issues—faculty, students, parents, alumni, regents or trustees, AAUP, ACLU, USNSA, WCTU, to list only a few. One cannot possibly please all and in the face of inevitably making some enemies one might as well act on principle and not on expediency. Before an institution ventures into the arena it should have thought through all of these issues and reached a consensus, or at least a position all its representatives are prepared to defend.

Education for whom?

The second question, "For whom?", is less controversial but equally important. As indicated earlier, design and evaluation of a drug education program requires an initial campuswide assessment of the general level of information about drugs and of student interest in and involvement with drugs. Students themselves are the best source of the data required for this assessment. One of the many reasons why almost everyone agrees that students should be invited and expected to help in planning a program is that this invitation, if sincere, is an expression of trust and respect, with which there could be little or no discussion of the local scene. Nationwide, it is possible to identify five classes of students with respect to interest in use of psychoactive drugs: (1) Those with little or no information or interest; (2) those with some information but with not enough interest to have experimented; (3) those with considerable knowledge who have tried one or more drugs, usually marihuana and possibly LSD, once or twice—*Experimenters;* (4) those who use one or more of the drugs occasionally, as on weekends and in social gatherings—*Users;* and (5) those for whom drug use and the drug group have become, at least temporarily, an exclusive or dominating concern and activity—*Heads.* Educational efforts will vary depend-

γ

ing on the number of students in each of these groups and on the degree to which members in each can be expected to participate in the program, at least initially. It should also be recognized that each of these groups is heterogeneous and that those in a given group may vary greatly in personality, motivation, goals, dress, academic major, and academic standing.

Education by whom?

The third question, "By whom?", presents the problem of selecting teachers, lecturers, discussion leaders, panelists, and the like, a problem which is also raised by the fourth question, "What?". One basic objective of drug education is the achievement of accurate knowledge about drugs and of some understanding of the problems encountered in research on the behavioral effects of drugs, as outlined in an earlier section. As far as this objective is concerned, drug education does not differ from education occurring within the context of the formal curriculum. The presentation of accurate information can best be done by an expert in the area who is prepared to present the material in an objective, straightforward way.

While other essential parts of a program will necessarily consider issues which inevitably arouse controversy and strong feelings, the basic facts about the action of drugs and the methods by which they are investigated are important and interesting in their own right and are best presented to a relatively uninformed audience without any emotional appeals or irritating (at least to some) commentary on social issues. A lecturer already identified through the press or through reports about his previous lectures as a crusader with strong biases about drug use, pro or con, will be far less effective in teaching these basic facts than a lecturer who wins respect because of his objectivity and his own respect for his audience. When this information is presented in an emotional, issue-begging, or one-sided way, students become involved in questioning the motivations and credibility of the speaker and in rationalizing away or ignoring the facts presented: That, for example, drugs are toxic, that continued use may in some individuals lead to dependence, and that what is recalled as a fascinating drug effect may be wholly due to suggestion, imagination or poor memory.

A very appropriate method for presentation of these basic facts would be as part of a regular course, such as introductory biology or psychology, where it would be integrated with other parts of the course and where an expert guest lecturer could be used if the instructor so chose. This approach would provide the important facts in an unemotional, noncontroversial setting. Much would depend on the initiative and interest of the instructor in planning the way in which this topic would fit into the rest of the course. Some instructors, even if interested, would find the topic of drugs not congruent with their objectives for the course. Others, though accepting the appropriateness of the topic, would prefer to avoid dealing with inevitable questions they judge to be outside their area of competence. In this case, the instructor can present the main topic, decline to deal with questions beyond the scope of the course, and refer the students to other previously identified colleagues who have indicated a willingness to engage the student in discussions of the personal, social and legal implications of drug use and of the social issues involved.

Recognizing that this approach may not be feasible even if judged desirable, other ways to provide this information should be sought. To the extent that the institution accepts personal growth of the student as a goal or responsibility, drug education can be viewed as part of a general program for providing students with information relevant to the problems encountered in achieving maturity. Freshman orientation courses or health and physical education courses may be appropriate contexts. If, however, such courses are perceived as having as their goal the support of a particular personal, professional or societal value system rather than the objective analysis of problems and the providing of all relevant factual information, they will probably not reach those students who most need the information. A lecture or unit labeled "drug abuse" or "dangerous drugs" or "narcotics" may resemble a sermon on the need for salvation preached to dedicated church attendants—plus a few sinners.

In most instances a program primarily based on the presentation of basic facts, if well done, will provide information that is adequate for students who fall in categories 1 and 2 above; i.e., those who have no knowledge or interest or some knowledge and some curiosity as a result of reading or talking with other students. Evaluation of the impact of such an approach should also provide a factual basis on which to make further decisions about future efforts. The other three groups of students have become involved to a greater or lesser degree in actually taking a socially disapproved or illegal drug and in defending or rationalizing what they have done. Programs for them present completely different problems, many of which are as much a consequence of ambivalences or discrepancies in societal attitudes as they are of drug use.

How does one deal with the student who, for better or worse, has already decided to use drugs, whether one knows this as a fact, suspects if, or is completely unaware of it? His decision may have been made with some knowledge of the risks and implications, or it may have been an impulsive response based on a mood or on the demands of a temporary social situation, with no real intention of further involvement. In either case, it also acquires added significance because the act to which it led was an illegal act. In any case, if the taking of the drug seems to lead to the perceived satisfaction of important personal needs, drug use is likely to continue—for some this is very infrequent use or periodic use, and for a few this becomes major involvement with drugs and the drug-taking group.

For the Experimenters and Users, those who take drugs periodically at most, the most effective educational approach should probably concentrate on giving information and on providing ample opportunity for discussion of the many relevant social issues. It is also of great importance to discuss with these students other ways of fulfilling the needs which they feel are satisfied by drug use.

We can assume that many of the college students who have become heavily committed to the use of drugs are at least temporarily more involved with their own problems than with changing or mastering the external environment through vigorous effort. They would seem to have found little fulfillment, satisfaction, or personally meaningful success in the typical high school or college, although they may have done very well academically, keeping one foot in the establishment rather than dropping out completely. Some of them are frustrated, angry and bitter. They reject the predominantly action-oriented, mastery-demanding, competitive culture, feel increasingly estranged both from themselves and others, and depend heavily on fantasy. Keniston[3] has referred to this type of student as alienated or disaffiliated. "Arguments based on traditional American values against drug use carry little weight for him; on the contrary, he values most in himself his own rebellion against such middle class standards." For these students the use of drugs is viewed not as self-medication but as an existential decision. "It is a matter of how one chooses to live one's life, how one hopes to seek experience, where and how one searches for meaning. To be sure, I doubt that we can hope to persuade students that drugs are ethically, humanly, or existentially undesirable if they are not already persuaded. But I think we can at least help the student to confront the fact that in using drugs he is making a statement about how he wants to live his life." [4]

Because of the legal status of marihuana, LSD, and other drugs important to the serious drug user, and because of the disciplinary policies adopted by many institutions, it is extremely difficult to reach the Head. He often develops, perhaps with good reason, a number of paranoid feelings: he tends to trust almost no one outside his drug group, or even inside it. A Head is usually reachable only when his group can no longer handle him, as in circumstances where his paranoid feelings toward members of the group itself become very strong. The only members of the academic community who are legally in a position to guarantee confidentiality are the physicians, the certified counselors, and the chaplains. Within any institution it should be made absolutely clear who can and who will guarantee confidentiality and such guarantees should be respected at all cost. Health service policies should be particularly clear and explicit, especially in institutions or States where reporting of illegal use or habitual use is mandatory.

Many students who have become deeply involved with drugs agree with such leading social critics as Fulbright, Freedman, Friedenberg, and Pike,[5] who suggest it is society which is sick. They do not feel that they themselves are sick and are not ideal prospects for psychotherapy. Because some tend to be humanistically idealistic, to have relatively low tolerance for frustration, and a number of paranoid feelings, they tend to reject outright any direct appeals or any offers of help. They may seek out an individual whom they respect and trust with whom to talk around the issues. That they are ever directly persuaded by others to stop is questionable.

Allan Cohen [6] has suggested that ex-users can provide a valuable liaison, serving as sympathetic advisers to staff as well as informal counselors to students who cannot be reached in any other way. He also suggests that ex-users are in a strategic position for dealing with the student who insists that anyone who has not had the experience cannot understand and should not sit in judgment.

In the last analysis there is probably little that can be done to reach the Head until he seeks contact. Dismissing him from school or turning him over to enforcement authorities will only confirm his alienation. "In the long run, then, those of us who are critical of student drug abuse must demonstrate to our students that there are better and more lasting ways to experience fullness, depth, the variety and richness of life than that of ingesting psychoactive chemicals." [7] If we accept the validity of the goals of these students and feel any responsibility in this area, we must identify and stress the advantages of nonchemical opportunities to explore, to experience, to develop meaningful relationships and activities, to foster individuality and self-realization. In doing so, we must also be prepared for the fact that students who use these opportunities well may not match the current stereotype of the ideal student.

In summary, there are no recipes for effective drug education programs. What any institution does will and should depend on its educational goals, its typical manner of working with students both in and out of the classroom, its total pattern of social control, the emphasis it puts on the personal and social growth of students and its tolerance for exploration and experimentation in the art of growing. All of these matters are controversial and are forced upon our attention by the rapid growth of many colleges and universities. Each institution must make its own decisions and evaluate those decisions in terms of its own goals. To the degree that the goals of a program are consistent with the broader goals of the institution, both inside and outside of the classroom, any program will stand a better chance of being successful. If students in the classroom are encouraged to question, to search and weigh evidence, to observe the rules of evidence and logic in arriving at a conclusion or position, it is foolish to think that they will accept a "snow job" on controversial issues outside the classroom.

General principles

There are some general principles of effective communication which should be considered, no matter what the approach or goal of a program.

1. The communicator must make a sincere assessment of his own goals and motivations. The goals of a program should be clear to him and to those he seeks to educate. He should recognize but not conceal his own biases; he need not apologize for his own position even as he is careful not to impose it on others.

2. The issues must be clear. Issues concerning the effects of drug use should be separated from related social issues, such as the right of privacy, the morality of legal sanctions, the acceptability of the status quo. To use drug effects as scapegoats, as the major

causes of many social problems, confuses all of the issues and leads to faulty perceptions and dangerous rationalizations.

3. The same rigor and logic should be demanded of the students as has been expected from the leaders and planners of the educational program.

4. Effective communication has been shown to be dependent on the prestige of, respect for, and credibility of the communicator. Lecturers, discussion leaders, counselors must demonstrate that they are accurate and authoritative (not authoritarian), that they are thoroughly conversant with the source and context of the facts they present or use to substantiate their conclusions.

5. It has been repeatedly demonstrated that attempts at persuasion based on high fear appeal or on exaggerated claims are generally ineffective and may boomerang, especially when the audience has high intelligence and considerable knowledge. This type of emotional appeal casts doubt on the credibility and motivations of the communicator and an audience which becomes concerned with testing credibility will be distracted from the real issues. Understatement and free admission of the provisional nature of the basic facts can often be far more effective.

6. Although not demonstrated experimentally, debate on an over-simplified statement of an issue (pro versus con) may not be as effective as the presentation of a variety of positions, each with its own merits and shortcomings, with opportunity for subsequent discussion and dialogue. In the debate situation the acceptance of evidence or of a point of view may be unduly influenced by the personality, verbal facility and charisma of the debater.

7. When audiences are heterogeneous in opinion, attitude, motivation and knowledge, provision should be made for subsequent discussion of a formal presentation so that discrepancies between the material presented and the beliefs held by the individual can be explored and clarified. Opportunity for further personal discussion should also be available to deal with individual conflict, anxieties, and uncertainties aroused by open discussion. There are many who can help: the health service, the counseling service, the chaplain, the residence advisory staff, faculty members, deans. Each school will have its own pattern. Hopefully, those available for such activity will have had an active part in general discussion and decisions regarding the goals of the educational effort and the official policy of the institution and will continue to sustain the

spirit of those goals and policies. They should have at their disposal up-to-date factual information in all related areas.

Institutional policy statements

In contrast to educational programs on special topics, which often arise in response to a growing incidence of student behavior designated by society as unacceptable or judged by the institution to be potentially harmful to the educational community, a policy statement is frequently a hasty response to a crisis or to demands from various segments of society that the institution state what it is doing or intends to do about such behavior. There is great diversity in such statements both in content and in sincerity of intent. At one extreme, the institution declares that the behavior is not its special concern, that it should be handled as it is elsewhere in society, and that the institution will cooperate fully with enforcement personnel in seeking out those who violate the law. At the other extreme, the institution insists that the handling of any problem of student behavior on the campus is the mutual concern of the institution and the individual student, to be dealt with in accordance with the goals and practices of the institution. The kind of statement a given institution issues, and indeed whether or not a statement is made at all, depends not only on adventitious local events and factors but also on its corporate nature, its goals and values, and its philosophy regarding relationships among three basic concepts—the educational institution, the student, and society.

The wide spectrum of policies is indicated in a 1966 survey of widely differing institutions conducted by *College Management.* "Not surprisingly, each institution reported a different approach to the problem. Some admitted to having drugs on campus right now. Others did not. A few had written policies, the majority avoided them. Some had hard and fast rules, others hoped to handle each case on its own merits." The survey found that all of the colleges contacted had given the problem serious thought and had developed a policy and a procedure for handling it. The editors concluded that "Most deans who have dealt with the problems of drug usage do not want hard and fast written policies. They feel the need to handle each case on its own merits." [8]

This position raises an important conflict of values. On the one hand, there is this desire to handle each case individually, a position which requires some ambiguity in the formulation of policy; on the other, there is the desire by students for unambiguous formulations and for disciplinary action based wholly on due process. "The institution has an obligation to clarify those standards of behavior which it considers essential to its educational mission and its community life. These general behavioral expectations and the resultant specific regulations should represent a reasonable regulation of student conduct but the student should be as free as possible from imposed limitations that have no direct relevance to his education. * * * Disciplinary proceedings should be instituted only for violations of standards of conduct formulated with significant student participation and published in advance through such means as a student handbook or a generally available body of institutional refutations." [9] Increasingly students are objecting to "government by men rather than law." [10]

As is true with most important decisions, some difficult dilemmas must be faced and some difficult choices made. Many of these involve values important to all segments of the educational community and are related in important ways to many areas of policy beyond the drug issue. Some of these decisions are central to the educational function of the institution; others are concerned with the individual, whether student, faculty member, or administrator, and his relationship to the institution.

Sooner or later many of the following issues will be raised. For institutions which have already faced them a policy statement on the use of drugs will be less difficult than for those which have not. In any case, all segments of the institution should be involved or at least consulted before the policy is formulated.

1. Academic freedom. How far does it extend beyond freedom of expression in activities clearly defined and generally accepted as educational?

2. The responsibilities of the institution as a corporate member of society to uphold the laws of society and to insist that all members of its community do likewise. What should happen when freedom of inquiry and expression lead to the questioning of the validity of given laws? If the university insists that all laws must be obeyed until changed, does it have any responsibility for facilitating changes in laws based on outdated or inaccurate assumptions? [11]

3. Public policy versus private policy. Some institutions choose not to make a public policy statement. They insist that their primary obligation to promote the growth and development of the individual requires freedom to deal with each case on its own merits.

Others choose to have two policies, a public policy which avows that the institution is a law-abiding member of society and does not condone behavior of which society disapproves and a private policy which serves as a basis for action and specifies procedures which will ordinarily be followed. The public policy may or may not specify the action which will be taken in individual cases and usually includes a phrase reserving the right to treat unusual cases according to their particular circumstances.

4. The relationship of policies and rules of the educational community to the rights of the individual as a member of society; i.e., civil liberties, the right of privacy, due process, innocent until proven guilty, illegal search and seizure, civil disobedience, trial by a jury of peers.[12]

5. Protection against improper disclosure and confidentiality of records. To what extent can the institution guarantee confidentiality and to what length is it or a member of its administration willing to go to protect this confidentiality?

6. The proper jurisdiction of the educational institution in matters of violation of civil laws by students. Should the institution take disciplinary action when an act violates a civil law but has no clear relationship to the educational objectives of the institution?[13] Does the institution have either the right or the obligation to enforce laws which do not pertain to its central function?

7. Within the institution who shall formulate policies and rules? Who shall deal with infractions of these policies and rules? Is it legitimate for college or university rules to be made by administration and faculty without consent of the governed—the students?

As should be immediately apparent, all of these questions go far beyond the drug issue. What may not be so apparent is the fact that any policy statement about drug use speaks to each, whether by commission or omission. There is no model policy applicable to every institution but each institution must work out its own answers and set its own priority of values. For most institutions it will be not only appropriate but fruitful to involve individuals truly representative of all segments of the institution in this enterprise. It is also desirable that the issues be faced in the context of all areas of relationships between the individual and the institution and not be decided separately for each area of conduct in which the institution wishes to influence behavior or to establish and enforce rules or standards. While recognizing that different areas of concern involve unique factors, such as the legal prohibition of drug use as opposed to less stringent laws pertaining to some of the disapproved aspects of drinking and sex behavior, each area should be dealt with in terms of principles. Proceeding from principle or general policy to exceptions has the great advantage of making clear to all concerned on what basis the exception is made and what conflicting value supports the exception.

The LSD and marihuana problem is a prototype of the problems that will almost certainly develop in connection with other drugs, old and new, and the drug issue is a prototype of issues in many other areas of college-student-society relationships. Experience in developing and evaluating programs and policies in this area should be helpful in meeting new problems as they arise and in planning educational activities, whether curricular or extracurricular, in other areas of personal and social concern.

The more basic issue which should be faced by institutions of higher education is that of prevention of similar problems in the future. According to Freedman, "the interest in drug experience informs us * * * that American society and education are doing little to contribute to the richness of life that students sense can be theirs * * *. The sterile formalism of much American higher education can hardly hold a candle to the psychedelic experience."[14] It seems likely that problems like the drug problem will continue to plague us until we are able to provide, within the framework of the educational institution itself, ways in which students can satisfy some of their important, noncognitive needs.

How adequately are society in general and higher education in particular providing the opportunities necessary for developing independence, an identity consistent with one's talents, abilities and dreams, meaningful and mature social relationships, a sense of worth and a place in the total scheme of things, values which one can live by rather than only give lipservice to? Since society now requires an increasing majority of young people to spend a major portion of adolescence in an educational institution, what is the responsibility of that institution? Is it the mass production of individuals who will survive in society as it is or will be, or is it the nurturance of the diversity of talents and the human resources which may make society a better place for all? Is it worth trying to preserve human dignity and imagination and individuality or is it impossible to maintain these in a society of 200 million people? If we take seriously the predictions of the Commission on the year 2000,[10] a year when most of our present college students will be in their fifties and themselves the parents of college students, how can we prepare them for the end of privacy, the demise of the family as we now know it, information beyond the capacity of the majority to absorb, severe social tensions arising out of growing pressures for personal achievement, a catastrophic amount of leisure time, a widespread use of drugs for manipulating the behavior of social deviants, a technology which will invade every aspect of human life, even programed dreams?

There are many symptoms of the inability of millions of adults to adjust to or cope with the pressures we now have—6 to 8 million alcoholics, many more millions whose lives are affected by alcohol, uncounted millions psychologically dependent on a variety of drugs, thousands of suicides, increasing divorce rates, violent protests in major cities. We have not yet solved even the initial problem of asking the right questions about the origin of these contemporary symptoms. How, then, do we prepare for the future? How do we foster wisdom and personal strength? Does education have a responsibility to do everything it can to provide optimal conditions for growth and attainment of maturity by all or does it merely reject, actively or by default, those young people who seek to find solutions to their problems in ways which society finds unacceptable? The answer to this question will vary from institution to institution. If it sees that one of its functions is to foster growth in all of its students there are many things that can be done which should be relevant to many current problems, including the drug problem.

1. Does the academic curriculum help the student prepare for the world of tomorrow? Is there room in it for credit courses on current social issues, practice in analyzing and seeking solutions to complex social problems, courses on the religious experience, on creativity, on varieties of interpersonal relationships? Can classroom work be supplemented by recognized, meaningful work experience in the community? In many of our best institutions the answer is "No." Neither the faculty nor the graduate and professional schools are ready to give up preparatory courses to make room for courses which seem to them irrelevant.

2. Do course examinations, the lecture system, current grading practices, and degrees based on hours of credit, required courses and an uninterrupted 4-year sequence support or interfere with educational goals appropriate to the world of today and tomorrow?

3. Can truly educational programs be developed outside the

curriculum to aid in the quest for values, meaningful life objectives, the nature of truth and purpose in the universe?

4. How can the best resources be provided for exploring meaningful personal relationships and the truth within oneself?

5. Is there room in higher education for the recognition of more than intellectual performance? Is the emphasis on training educationally sound or is it a compromise with the demands of society?

A number of schools have incorporated seminars on current issues into the curriculum, maintaining a high level of scholarship in exploring issues of real concern to the students as they arise and not worrying that such courses have not been in the catalogue for years. Others have integrated community work experience into social science courses, giving meaning and relevance to methodology and theory.

Other schools have made faculty available in residence halls in the hope that something will happen but the extent of faculty contribution depends on their breadth of intellectual interests, their sincere interest in, understanding of and concern for young people, and the security in their professional positions necessary to maintain status with their exclusively professionally oriented colleagues.

Residence hall living can be regarded as anything from a commercial hotel or apartment house arrangement to a laboratory for personal and social growth. Through diversity and without regimentation opportunities can be provided or fostered through every aspect from architectural design to staffing. Sensitivity groups, under expert leadership since this is not a social gadget with which to play around, can provide the kind of mutual self-exploring sought by many in the drug-using groups.

A general climate which encourages students to request special seminars and courses and to initiate and plan lecture series, teach-ins, conferences and workshops also gives the staff opportunities for timely response to the expressed needs of the students.

All of these suggestions really come back to the question of the goals of education. Is it the role of higher education to turn out individuals who are personally mature enough, secure enough and creative enough to cope with the unbelievably complex problems which lie ahead or is it enough simply to produce individuals trained to meet the requirements of an ever-increasing gross national product? Are human resources to be defined only in terms of their relationship to the productivity of the economy? Can a society which is building-in an undreamed of amount of leisure and dehumanizing much work continue to invest its educational effort exclusively in preparation for that work? Could it be that the deprived of the future will have a good job, an excellent salary, a home in the megalopolitan equivalent of the suburbs, a robot housekeeper?

This is in part what the drug problem is all about. Adults with their alcohol and tranquilizers and students with their marihuana and LSD are both reacting to conditions which negate human values and human worth. The main difference is that the adults' drugs of choice are depressants, taken to blunt the pain. The students' drugs of choice are perceived by at least some of the more serious, rightly or wrongly, as an attempt to strike back at, to seek insight into, to protest what they feel to be the causes of the pain. It is a reasonable prediction that if all drugs were eliminated from the campus tomorrow the search would go on in some other form, perhaps more tolerable to society, perhaps less.

Notes

[1] Straus, R. and Bacon, S. D., *Drinking in College.* New Haven: Yale University Press, 1953.

[2] Sanford, R. N., *Where Colleges Fail.* San Francisco: Jossey-Bass, Inc., 1967.

[3] Keniston, K., *The Uncommitted.* New York: Dell Publishing Co., 1967. (Delta Paperback No. 9237).

[4] Keniston, K., "Drug Use and Student Values." *NASPA Drug Education Project Background Paper,* p. 9–10.

[5] Freedman, M. B., *The College Experience.* San Francisco: Jossey-Bass, Inc., 1967. Friedenberg, E. Z., *Coming of Age in America.* New York: Random House, 1966. (Vintage Paperback XV–368.) Fullbright, J. W., Address to American Bar Association, Honolulu, Hawaii. As reported in the New York Times, July 1967. Pike, J. A., "Religion and Rebellion." *Psychology Today,* 1967, *1,* No. 4, 44–50. See also: Rossberg, R. H., "Jumping Over the Paper Moon." *NASPA Journal,* 1967, *4,* 119–120.

[6] Cohen, Allan, "LSD and the Student: Approaches to educational strategies." *NASPA Drug Education Project Regional Conference Paper.*

[7] Keniston, K., "Drug Use and Student Values." *NASPA Drug Education Project Background Paper,* p. 10.

[8] "Drugs on Campus: How Seven Colleges Meet the Challenge." *College Management.* 1966, *1* (2), 20–25.

[9] Proposed Joint Statement on Rights and Freedoms of Students (AAUP, AAC, USNSA, NASPA, NAWDC), July 1967. Procedural Standards in Disciplinary Proceedings, sec. A.

[10] Hollander, C., "Drugs and Campus Policy." In *Student Drug Involvement* (C. Hollander, editor), Washington, D.C.: United States National Student Association, 1967, p. 51. This article surveys a number of campus policies, classifies them into three groups—conservation, moderate, and liberal, and presents the USNSA position.

[11] Freedman, M. B., op. cit., ch. 14.

[12] Proposed Joint Statement on Rights and Freedoms.

[13] Ibid.

[14] Freedman, M. B., op. cit., p. 172.

DRUGS ON THE COLLEGE CAMPUS: PART II

66/67

VI. SELECTED DRUGS

This section is written with great reluctance. It is written in response to insistent demand for facts about specific drugs and their actions, a demand which also says, "Don't give us references and make us do it, do it for us in a simple, easy to understand way." The assumption implicit in this demand is that drugs do things to the organism which can be simply and reliably reported or summarized. If anything has been accomplished to this point it should be an understanding that all is not so simple. Our knowledge of how drugs act is limited by the extent of our knowledge about the functioning of the human organism and its complex central nervous system, knowledge which is almost exclusively at the level of hypothesis, not reliable, immutable fact. Modern biochemistry, biology, brain research, genetics, pharmacology, physiology, and psychology are rapidly developing research tools and methods and concepts which are resulting in insights, hypotheses, and theories which were undreamed of a decade ago. As these are pursued in the laboratory, confirmed, revised, discarded and elaborated, our understanding of the physiological functioning of the organism and the relationship of this functioning to behavior will grow and be modified, hopefully always in the direction of better understanding, better information.

The scientist has learned to live with this situation, to accept the fact that he may wake up any morning to find that what looked like a fact the day before has evaporated in the face of new information, new evidence. Being human, he tends to hang on to yesterday's information as long as possible, to be skeptical until convinced, but he knows that even the most cherished theories and facts must stand the test of new evidence. The nonscientist often finds this hard to do or even to understand, and resists it doggedly. Relevant in this regard is the fact that a standard textbook of pharmacology such as that of Goodman and Gilman, first published in 1941, was revised in 1955 and again in 1965. In 1941 and 1955 it was written by two men; in 1965, 42 experts contributed chapters in their specialties to the third edition. In the preface to the second edition (1955) the authors state: "The 14 years which separate the two books have witnessed pharmacological and therapeutic advances unparalleled in the history of medicine. Nearly every page of the text reflects these advances."[1] In the preface to the third edition (1965), in their role as editors rather than authors, they state: "During the last decade there has been an accelerated tempo with respect not only to the development of new drugs but also to the understanding of the mechanism of action of drugs at the most basic level."[2]

As many as 1,000 notices of claimed investigational exemptions for investigational drugs have been filed in a single month. To process these applications, the Food and Drug Administration has set up specialized units for reviewing new drug applications (marketing or research) in six pharmacological and physiological classifications: Cardiopulmonary and renal drugs; dental and surgical adjuncts; metabolism and endocrine drugs; antiinfective drugs; oncology and radiopharmaceuticals; and neuropharmacological drugs.

These considerations, combined with the lag involved in getting experimental results into the literature, should make one most hesitant in purporting to report facts. It should also make anyone skeptical of the use of evidence from 5 to 20 years old to support belief or action without checking it in the light of current developments. To quote the 1955 edition of Goodman and Gilman in 1967 when the 1965 edition presents evidence which contradicts the 1955 edition is inexcusable The layman must recognize and the scientist must remind himself that what we do not know far outweighs what we do know and it is essential to follow the biological and social scientist as he strives to push back the frontier of ignorance.

This caution applies particularly to the scientist, the expert. "The study of drugs which alter central nervous functions such as consciousness, mood, perception, and behavior is a complex field with many uncertainties and numerous, often unsubstantiated, viewpoints and opinions even among knowledgeable and experienced people. Interpretation of scientific data is often colored by moralistic motives and value judgments."[3] Arguments and positions based on moralistic considerations or positions may be perfectly valid but they should be discussed as such and should not pervert science when they are in fact rejecting science.

Scientific and official reporting about drug effects reflects opinions and emotions about drug use which are stronger than the evidence. That reputable and well-intentioned persons, even government officials, may make unsupported claims is documented in the Task Force Report on Narcotics and Drug Abuse of the President's Crime Commission.[4] When the references in the very important WHO paper on drug dependence, referred to above, were meticulously checked it was found in some cases that: (1) the reference had little relevance to the statement made, (2) the reference was not a scientific report or careful observation but an impression or clinical observation written in a letter or clinical note to a medical journal, or (3) the reference was only a quotation from an earlier source or a simple repetition of a claim. The popular press, in stimulating and reponding to public alarm about drugs, often presents material which markedly deviates from scientific evidence. It is suggested that the basic reason for this kind of reporting, whether by scientist or by journalist, is that what is basically anxiety about people is translated into anxiety about drugs.

A second reason for our reluctance to summarize the current status of knowledge about drugs and their relationship to behavior is the fact that an adequate summary and evaluation of current psychopharmacological studies of each of the drugs would far exceed the scope of this discussion. If there is a single result that has emerged from the past 10 years of study of the relationship between specific drugs and behavior, either in the laboratory or in field studies, it is that such a relationship is an increasingly complex affair. It is complex enough in the laboratory but generalizations from the laboratory to naturally occurring behavior hold even more hazards. For example, one can hypothesize that driving skill is made up of certain components such as reaction time, attention, scanning, eye-hand coordination, etc., design elegant tests of each of these skills, test the performance of volunteer or paid subjects on each under drug and nondrug conditions, and add up the results as an index of the effect of the drug on driving skill, when it should be stated as the effect of the drug on some skills involved in driving. There is an important difference. The fact that drug does not affect any of these component skills in the laboratory is no guarantee that the drug does not effect actual driving performance. One may develop elaborate simulations of the driving situation which at least test all components together, but here again it is unwise to generalize from the study of laboratory subjects to performance by others in other situations. We know that the effect of a drug on any given behavior may vary with personality (are paid laboratory subjects equivalent to individuals who have chosen to take an illicit drug or for whom a physician has felt it appropriate to prescribe a drug?), with the level of competence in a given skill (were the subjects tested more or less skilled drivers?), with the physiological state of the individual (were the subjects fatigued, hungry, annoyed, depressed?), with the motivation of the individual (are paid college students in an experimental situation more or less motivated to perform well?[5] more or less motivated than the individual who finds himself driving after taking a drug?), with the expectations of the individual (are experimental subjects given a substance which they cannot identify equivalent to an individual who has deliberately taken a substance about which he has certain expectations concerning the effects which it will have?). Of the 68 percent of adult Americans who have at least one drink each year, many millions do not have accidents. We thus return to people—people who drink or use other drugs, who drive after having ingested alcohol (or drugs) and who do have accidents.

Our response to this situation has been the decision to present a very brief, simplified summary of the current basic pharmacological information on the drugs which are of major concern—the barbiturates, amphetamines, marihuana, LSD, and alcohol. A popular drug which is widely and vigorously advertised and largely self-prescribed—aspirin—is included to help provide some perspective. Noticeable by its absence is the whole class of true narcotics. At this time there is very little indication that college students are involved or interested in these drugs, with the possible exception of meperidine (Demerol), although these drugs may be part of the multidrug habituation pattern often seen in the extreme drug-using groups.

In general, the historical background, the general effects on various organic systems, the major clinical uses, idiosyncratic reactions and acute and chronic toxicity patterns, and the potential for tolerance and dependence are described. Discussion of the psychopharmacology, i.e., the behavioral effects, is largely omitted for reasons stated above. Where appropriate, verified risks as summarized by Blum are included.

The basic sources for pharmacological data are appropriate chapters from the 1965 edition of Goodman and Gilman, "The Pharmacological Basis of Therapeutics." Other sources are used as indicated.

One final reminder is in order. Extensive research is producing new information daily. Details, particularly in the area of mechanisms of action, may already be out of date or may become so any day. New information may represent either correction of existing information or the addition of information not presently available. The important impact of these summaries should be the realization that chemical agents react with and influence the total organism and that they produce untoward reactions at some dosage levels in some people under some circumstances.

Depressants—I. Barbiturates

Barbituric acid was first synthesized in 1846 and this form of barbiturate does not have the depressant effect on the central nervous system which is associated with modern barbiturates. The first sleep-producing (hypnotic) barbiturate was synthesized in 1903 and called barbital (Veronal). Since that time some 2,500 related molecules have been synthesized, about 50 of which have been marketed for clinical use. Approximately a dozen are widely used in the United States. Modifications in the molecular structure have produced changes in such characteristics as solubility, time of onset of action, duration of action, and primary type of depressant action. Barbiturates are generally classified in terms of duration of action as: (1) long acting, of which phenobarbital (Luminal) is best known, (2) short to intermediate acting, such as amobarbital (Amytal), pentobarbital (Nembutal), and secobarbital (Seconal), and (3) ultra short acting (used primarily for intravenous anesthesia), of which hexobarbital (Evipal) and thiopental (Pentothal) are examples.

General characteristics.—Barbiturates are general depressants. They are unspecific in their effects and are capable of depressing a wide range of functions, including those of nerves, skeletal muscle, smooth muscle, and cardiac muscle. All barbiturates have effects on the central nervous system varying from mild sedation to coma, depending on the dosage level. At normal clinical dosage levels they may depress the respiratory system and produce slight decreases in blood pressure and heart rate in the cardiovascular system. At high dosage levels the above are accentuated, the activity of the smooth muscles of the bladder and uterus is depressed, the secretion of a hormone in the kidney which results in decreased flow of urine is stimulated, and the enzyme system of the liver is affected, probably resulting in morphological changes in the liver with chronic use of high doses.

Clinical uses.—Clinically, barbiturates are used to induce sleep, to relieve mental stress, as a preansthetic medication, as diagnostic and therapeutic aids in psychiatry, and in the control of acute convulsions in tetanus and epilepsy and of convulsions which may be caused by drugs such as strychnine, cocaine, and local anesthetics.

Idiosyncratic and toxic reactions.—At moderate dosage levels, barbiturates may produce disinhibition and euphoria much as alcohol (also a depressant) does. In some persons, especially children and the elderly, certain barbiturates may produce excitement rather than sedation. Others may react with lassitude, dizziness, nausea, or vomiting following the characteristic period of sedation or sleep. An individual may react differently at different times and at different dosage levels. Allergic reactions may occur in some individuals but they are less frequent with barbiturates than with many other drugs. These reactions include swelling of the face, dermatitis and other skin lesions. In rare cases there may be fever as high as 105°, delirium, degenerative changes in the liver, or anemia.

Excessive dosage levels (excessive may vary from individual to individual and from situation to situation) result in barbiturate poisoning which may involve convulsions, coma, or death. In some individuals prolonged use, usually in amounts exceeding normal therapeutic dosage levels, may result in a high degree of psychological dependence, toxic psychosis or delirium.

As is true of most chemical substances, the type and rate of elimination of the substance is important. In the case of the barbiturates, but varying from compound to compound, three processes are responsible for the elimination of the substance from the central nervous system: (1) Redistribution from the brain to other tissues, (2) metabolic destruction, chiefly by the liver, and (3) excretion of the nondestroyed material by the kidney. The presence or relative importance of each of these processes depends on the particular form of the barbiturate. It may be stored in muscle and fat after redistribution from the central nervous system, resulting in cumulative effects from repeated doses. Traces of barbital may be detected 8 to 12 days after a single hypnotic dose.

Tolerance and dependence.—Tolerance to barbiturates may develop in some individuals even when relatively low doses are taken repeatedly. The mechanism of tolerance is not fully understood. It may be a function of more rapid destruction of the drug in the liver. It may also result from an adaptation of nervous tissue to the presence of the drug. In either case it results in the need for increasing dosage levels in order to produce the desired effects. Unlike morphinelike drugs, but similar to alcohol, there is a limit to the dosage level to which an individual can become tolerant. This limit varies widely from individual to individual.

Doses of 800 mg. (normal therapeutic dose is 50 to 100 mg.) daily for 6 weeks or more have been shown to produce severe physical dependence. Severe physical dependence on barbiturates is very dangerous and is far more serious than physical dependence on opium, morphine, and heroin. Abrupt withdrawal following excessive use often results in convulsions, stupor, coma, and death. All of these reactions may be accentuated when barbiturates are used in conjunction with alcohol.

Some behavioral and social considerations.—Over 400 tons of barbiturates (3.6 billion normal doses) are produced annually in the United States. Aside from the fact that the profits in the illicit market are enormous, the significant fact is that tremendous quantities of a substance with high potential for harm at excessive doses in some people are being used by individuals who, for the most part, believe that barbiturates are harmless pills whose only functions are to produce a good night's sleep or, in some instances, to produce a "high" not unlike that produced by alcohol. Every year there are approximately 3,000 deaths due to accidental or intentional overdose of barbiturates.[6] There is increasing evidence which suggests that many of these deaths may not be intentional suicides.[7] If ingestion of a normally sleep-producing dose is not followed by sleep, the individual may show signs of euphoria or of confusion and poor judgment. If the original intent was to produce sleep, he may take further amounts which may in turn produce more confusion and result in taking still more of the drug, sometimes leading to acute poisoning or death. In addition, normally harmless amounts of barbiturates following ingestion of large amounts of alcohol may produce severe reactions.

At the behavioral level, Blum [8] reports that use of barbiturates has been shown in some instances to be associated with, but not the cause of, the following types of behavior: Suicide, accidental death, intensification of the effects of alcohol, and traffic fatalities. He points out, however, that the problem of suicide is not a problem in drug control but rather a social and psychological problem and that the only demonstrated association with traffic fatalities is based on inferential experimental evidence such as decrease in reaction time and impairment of driving skill under simulated driving conditions. The absence of a quick and reliable method of determination of barbiturate use, similar to methods available for alcohol, makes determination of involvement of barbiturates in actual accidents very difficult.[9] The present evidence indicates that there are risks in barbiturate use but that the nature and amount of such risks vary with the individual and with the circumstances of use.

Depressants—II. Ethyl alcohol

In the Middle Ages, alchemists considered distilled alcohol to be the long-sought elixir of life, and it was used as a remedy for practically all diseases.

General characteristics.—Applied locally, alcohol dehydrates and hardens cells, cools skin by evaporation, helps prevent sweating, irritates mucous membranes and blocks conduction in peripheral nerves at high concentrations. When ingested, alcohol is rapidly absorbed from the stomach, small intestine and colon, and is fairly uniformly distributed throughout all tissues and all fluids of the body. Almost all of the alcohol that enters the body is initially oxidized in the liver.

Alcohol is a primary and continuous depressant of the central nervous system. Apparent stimulation effects are the result of the depression of inhibitory control mechanisms. Alcohol is thought to exert first its depressing action on the more primitive parts of the brain responsible for integrating the activity of other parts of the central nervous system, thereby releasing the higher centers from control. The first behavioral processes to be affected are those which depend on training and previous experience. At lower dosage levels, spinal reflexes are enhanced but at increasingly higher levels there is general impairment of nerve function and general anesthesia.

Idiosyncratic and toxic reactions.—Some individuals are sensitive to small amounts of alcohol but the symptoms are in general similar to those resulting from larger amounts in other individuals. Small amounts of alcohol may stimulate respiration slightly but large amounts produce dangerous depression of respiration. It exerts only minor direct effects on the cardiovascular system. In amounts which cause severe intoxication cerebral blood flow is increased but cerebral oxygen uptake is markedly reduced. At lower dosage levels body temperature falls as a result of increased cutaneous blood flow and sweating. With high amounts of alcohol a pronounced fall in temperature occurs as a result of depression of the temperature-regulating mechanism in the central nervous system. In the gastrointestinal tract, high concentrations of alcohol are irritating to the membranes and, if the condition is chronic, often leads to gastritis. Continued use of large amounts is thought to promote accumulation of fat in the liver.

Clinical uses.—Although largely replaced by other agents, alcohol has been and is to some extent still used as a tranquilizer and sedative, as a potentiating agent for narcotics, barbiturates and tranquilizers, in the treatment of disorders of appetite, obesity, diabetes, nutritional deficiencies, and cardiovascular disease. It is currently most widely used externally as an astringent, a cooling agent, a counterirritant and an antibacterial agent.

Tolerance and dependence.—Repeated ingestion of alcohol results in tolerance so that a higher level of alcohol in the blood stream is required to produce a given level of intoxication. Both physical and psychological dependence may also result from prolonged use. Jellinek concludes from available evidence that alcohol dependence occurs in about 10 percent of users and that the development of physical dependence requires the consumption of large amounts of alcohol over a period of from 3 to 15 years or more.[10] In the dependent individual, even a few hours of abstinence precipitates the beginning of the alcohol withdrawal syndrome, a syndrome similar to that following withdrawal of the barbiturates or other depressant drugs. In the early states of withdrawal from alcohol, tremor, nausea, weakness, anxiety, and perspiration appear; there may be cramps and vomiting; the subject may begin to see things, first with eyes closed and then with the eyes open, but he retains insight and remains oriented. At later stages, insight is lost, confusion, disorientation, delirium, agitation, and convulsions become marked. Persecutory delusions and hallucinations may become so vivid that their unreality may be doubted even after recovery. Without treatment, recovery usually occurs in 5 to 7 days—"that is, if the patient does not die." [11]

Some behavioral and social considerations.—There is an extensive literature on alcohol and on the psychology and sociology of alcohol use and abuse. In contrast to other psychoactive drugs, alcohol is generally regarded as a beverage rather than a drug and self-induced intoxication with alcohol, at certain times and in certain situations, meets with at least some degree of social approval. Its wide acceptance is based, in part, on its usefulness in decreasing feelings of tension and anxiety and in fostering pleasant and sociable moods in most individuals. It need not be pointed out that even moderate amounts may regularly result in aggressive and offensive behavior in some individuals. A recent national survey estimates that 68 percent of all American adults had at least one alcoholic drink in 1965; there are millions of Americans in each of the following categories: Light drinkers, moderate drinkers, heavy drinkers, problem drinkers, and alcoholics; there are perhaps 70 million Americans who drink regularly.[12] It is very difficult to assess the risks they take when they drink since some of them would, even if they were nondrinkers, become involved in accidents, absenteeism, riots, crime, mental illness or suicide. Nevertheless, it is also true that use of alcohol has been associated with personal disaster, to themselves and others, in millions of drinkers. It should be noted that participants in the NASPA regional drug conferences rated the problem of alcohol abuse on their campuses as much more serious and widespread than the problem of abuse of other psychoactive drugs.

Stimulants—Amphetamines

The amphetamines belong to a class of drugs known as sympathomimetics because they produce effects resembling those resulting from stimulation of the sympathetic nervous system, a part of the nervous system which has primary control over bodily functions. Other familiar sympathomimetic drugs are ephedrine and epinepherine.

General characteristics.—Sympathomimetic drugs have, in general, six types of action: (1) Excitatory action on smooth muscles such as those in blood vessels supplying the skin and mucous membranes and on secretion of the salivary glands; (2) inhibitory action on other smooth muscles such as those in the intestinal wall, the bronchial tubes, and blood vessels supplying skeletal muscles; (3) excitation of heart action resulting in increased heart rate and force of contraction; (4) metabolic actions such as an increase in the conversion of glycogen into sugar in liver and muscle and the liberation of free fatty acids from fatty tissues; (5) an excitatory action on the central nervous system resulting in respiratory stimulation, an increase in wakefulness, and (6) a reduction in appetite. There are quantitative differences in each of the above types of action for different drugs in the sympathomimetic class. While having all of the actions described for this class of drugs, amphetamine (Benzedrine), the very similar but more potent dextroamphetamine (Dexedrine) and methamphetamine (Methedrine) are particularly effective central nervous system stimulants.

The actions of amphetamine on the cardiovascular system are rather inconsistent, varying from one person to another; typically blood pressure rises, but it may fluctuate or even fall. It has a marked contractile effect on the sphincter of the bladder, making it of value in treating enuresis and incontinence. Its effects on the digestive system are unpredictable; if intestinal activity is pronounced it may reduce it but, if already reduced, it may increase it. It is a respiratory stimulant through its action on the respiratory center in the brain. In many individuals (but not all) its psychological effects are primarily a feeling of wakefulness and alertness, euphoria and elation, a sense of greater ability to concentrate and to think and speak effectively and mood of enhanced initiative, self-confidence and general well-being. For others, there may be an uncomfortable or even frightening increase in psychological tension. It depresses appetite by an as yet undetermined action in the central nervous system. Although the usual route of administration is oral, there are reports of an increasing tendency among those who use amphetamines for "kicks" to take the drug, primarily methedrine, by intravenous injection, since the more rapid absorption results in a more potent effect. Individuals who thus "shoot" amphetamine often take excessive doses at very short intervals over a period of 1 or 2 days. Such use may result in severe toxic reactions and in hepatitis and other secondary reactions to the use of nonsterile needles.

It is believed by some that amphetamines act in the central nervous system by altering brain amines. Kety and his coworkers [13] have shown that, among other things, amphetamine releases norepinephrine in the brain. This fact aligns it with other antidepressant drugs which increase the concentration of norepinephrine at important sites in the brain.

Clinical uses.—Clinically, amphetamines are used in the treatment of obesity, narcolepsy (overwhelming attacks of sleep which cannot be inhibited), parkinsonism, depression, certain behavior disorders, and petit mal epilepsy.

Idiosyncratic and toxic reactions.—The toxic dose of amphetamine varies widely. Acute toxic effects may occur in individuals with sensitivity to the drug with doses as small as 2 mg. but are rare with doses of less than 15 mg. Severe reactions have occurred at a 30 mg. level but levels of 400 mg. and higher have been survived. Toxic effects usually result from overdosage and include numerous central system, cardiovascular and gastrointestinal effects. They may include restlessness, dizziness, talkativeness, tenseness, irritability, insomnia, confusion, anxiety, delirium, panic states, headache, anginal pain, circulatory collapse, nausea, vomiting, diarrhea, and abdominal cramps. Convulsions, coma, and cerebral hemorrhage often occur in fatal poisoning.

Tolerance and dependence.—In contrast to the majority of central nervous system stimulants, amphetamines may produce tolerance which affects various systems selectively. While increased dosage levels may be necessary to maintain improvement of feelings of energy and well-being, the same dosage level may result in marked increases in nervousness and insomnia. This fact probably contributes to the alternating use of amphetamines and barbiturates.

The question as to whether amphetamines produce addiction is a prime example of the confusion created by the use of this term. If addiction is equated with physical dependence, defined on the basis of the occurrence of specifiable physical withdrawal symptoms, the available evidence would suggest that addiction so defined does not occur, although evidence of changes in electroencephalogram is noted.[14] Some investigators, however, who have noted the typical sleepiness following amphetamine use,[15] the unusual depth and length of sleep following high doses and the great hunger for food which may follow such sleep,[16] contend that these symptoms following amphetamine use do represent withdrawal symptoms and thus indicate physical dependence.

If, on the other hand, addiction is defined on the basis of habituation, psychological dependence, or desire or craving, there are numerous clinical reports, in contrast to controlled research studies, which lead some authors to conclude that addiction does occur.[17] The controversy is further complicated by the fact that in most of these reports the cases labeled "amphetamine addiction" involve the excessive use of amphetamines as part of a daily multiple drug sequence.[18]

Amphetamines have a high potential for psychological dependence in some individuals if used regularly over a long period of time. Psychological dependence would seem to be a function of the drug's ability to produce feelings of energy, initiative, self-confidence and well-being in many people. Since this effect is usually followed by a reaction of fatigue and depression, a return to the former state is particularly sought. This up and down cycle is accentuated if the amphetamine results in insomnia and a barbiturate is taken in order to sleep. We referred earlier to status medicamentosis, a condition found in individuals who regularly but indiscriminately medicate themselves with a variety of drugs.[19] The person who begins to take a drug, not as medication, but for kicks, may also go on to regular use of several drugs daily in a sequence in which one drug masks or reverses some of the lingering aftereffects of another drug.

Some behavioral and social considerations.—Probably because of their important subjective effects such as the prevention or masking of fatigue and a variety of mood changes involving feelings of confidence, efficiency, and well-being, studies of the behavioral effects of amphetamine abound. Their effects have been studied in the laboratory, in military field studies, in mental hospitals, and on the athletic field. In a reappraisal of their comprehensive (112 references) 1962 review [20] of studies of the effects of caffeine and amphetamine on performance, Laties and Weiss (1967) conclude: "There is little doubt that amphetamine can improve performance on a wide variety of tasks, especially those involving an element of fatigue or boredom." [21] There is also considerable literature on the use and value of amphetamines in various mental and behavioral disorders. They have been used in mild mood disturbances, psychoneuroses, schizophrenia, manic-depressive psychoses, and chronic alcoholism. Certain types of delinquent children have been reported to respond beneficially. The literature in this area is controversial, primarily because of methodological problems, and this is not the place to consider it. It is sufficient to restate that different individuals respond differently to various dosage levels under various conditions.

Amphetamine abuse is a social problem in a number of countries, including the United States. Perhaps the most dramatic pattern of abuse is "speeding." Each injection is followed by a general climax of intense feelings and bodily sensations. This practice is not usual on the college campus. It is recognized even in off-campus drug groups as a very dangerous practice. "Speed kills" signs are frequent in such areas as the Haight-Ashbury district of San Francisco. The drug in tablet or capsule form may also be used irresponsibly for thrills, mood change, and foolishly prolonged sessions of study or driving. It is worth noting that many of the more or less typical effects of the amphetamines contrast with those which some students expect to get from marihuana, LSD, and alcohol. Instead of the relaxation expected with marihuana and alcohol or the emphathy and enhancement of subjective experience sought with marihuana and LSD, amphetamines may produce a mood of tension, loud egotism and intense involvement in achieving tasks with reduced sensitivity to the feelings of others. This is probably not a very popular mood on our college campuses at the present time.

Hallucinogens—I. Marihuana

It is impossible to discuss marihuana without first attempting to clear up a massive terminological confusion which adds to all of the problems discussed in chapter II. For a variety of reasons the term "marihuana" has become, in this country, synonymous with cannabis and all of its products and derivatives, including the natural and synthetic tetrahydrocannabinols. For purposes of clarity in this discussion, the term "cannabis" will be used as the general term, the term "marihuana" will be used to refer to the particular forms of cannabis which are widespread in North America, and the term "tetrahydrocannabinol" will be used where derivatives or synthetics of cannabis are involved.

Cannabis is a very ancient substance which is obtained from the common hemp plant, *Cannabis sativa,* of which *Cannabis indica* and *Canabis americana* are species. This plant grows wild in most temperate climates in the world. The fibers of its stalks are widely used for the manufacture of rope. The substance cannabis is derived from a resin exuded by the female plant. The resin is primarily concentrated in the tops of the female plant but is also present to some degree in its leaves and flowering shoots. The potency of cannabis is a function of the climatic and soil conditions under which the plant grows, the time and method of harvesting, and the part of the plant from which it is derived. In certain parts of India, primarily the high plateaus, cultivation and harvesting are highly developed.

The careful harvesting of the resin exuded by the tops of the cultivated female plants just prior to flowering yields the most potent form of the substance which, in the form of cakes, is known as charas in India and, in the form of a white powder, as hashish in the Middle East and North Africa. The dried leaves and flowering shoots of the plant, containing smaller amounts of the active substance, is called bhang in India and the resinous exudate from the small leaves and brackets of the plant, ganja. The leaves, stems and flowering tops may be dried and chopped to produce the marihuana common in Mexico and the United States. The potency decreases from charas and true hashish to ganja, to bhang, to marihuana. The least potent marihuana derived from plants grown in North America may have a potency relationship to the best charas like that of beer to 190 proof alcohol.

As long as the term "marihuana" is used indiscriminately to refer to cannabis of all kinds and potencies, confusion will continue. Much of the controversy about the effects of marihauna is a result of this confusion. In this country some of the vigorous opponents of marihuana seem to foster this confusion by attributing to any use of marihuana the effects produced primarily by excessive use of the more potent forms of cannabis, in an attempt to preserve a strongly negative public image of marihuana. But even Dr. J. Bouquet of Tunisia, one of the firm and oft-quoted opponents of marihuana, has indicated the necessity for careful distinctions: "* * * it must be noted that the most serious accidents are observed in individuals consuming hashish (charas, chira); that is to say, the crude resin, and not in the smokers of the plant itself, in its natural state. In fact, whereas the plant is known to contain on an average from 5 to 8 grams of crude resin per hundred grams, hashish contains from 35 to 47 percent of it." [22]

A second source of confusion arises from the great complexity of the substances in the plant and its resin. There has been relatively slow progress in the chemical and pharmacological study of these substances, partly because of the difficulty of obtaining material of known structure and potency. Three of the constituents of the crude resin are cannabinol, cannabidiol, and tetrahydrocannabinol. Tetrahydrocannabinol is an isomerically complex group of substances, one of which is believed to be the constituent producing the effects associated with cannabis use in humans. In the past most research studies on this drug have used either natural extracts of tetrahydrocannabinol of more or less unknown potency and constitution or synthetics which were not identical to the natural constituents. Well controlled behavioral and physiological studies have barely begun. In addition to the problem of precisely identifying the chemical structure of each of these substances and the problem of shortage of material for research, there is also the problem of differential effects due to mode of absorption—whether absorbed through the lungs by inhalation of smoke after combustion of the substances or through the digestive tract after ingestion. One effort to determine the differential effectiveness of different routes of absorption used machines designed for testing the effectiveness of cigarette filters to capture the active ingredient from cannabis smoke. It resulted in a substance which, when administered orally, did not produce the same degree of effect as the unsmoked extract. The investigator concluded that either something is lost in the process of smoking or that other substances are formed which reduce the effects of the unsmoked extract.[23] On the other hand, a substance of known chemical structure (Δ^9=THC), recently isolated from hashish and demonstrated to produce marihuana-like effects in man, has been shown to be approximately three times as potent when smoked as when taken orally. In this instance three possible explanations are suggested: (1) More effective and rapid absorption from the lungs, (2) less rapid detoxification of the drug because of bypassing the liver, (3) conversion of Δ^1=THC to more active material by heat.[24]

In order to do adequate scientific research on the behavioral effects of cannabis, there are two prime requirements: (1) Availability of a substance of known chemical structure and of specifiable potency; and (2) availability of a substance which is effective in a form which can be administered without the subject knowing what it is. One cannot compare a substance of unknown potency which is smoked with a substance, synthetic or extracted, which is taken orally. This rule should be remembered when trying to use the results of laboratory studies involving oral administration to show how dangerous or how safe marihuana smoking may be.

General description.—It is ironic that so little is known about the pharmacological and behavioral effects of what, with the possible exception of alcohol, may be the most widely used psychoactive drug in the world. This paucity of knowledge would seem to be a result, first, of the fact that what is now thought to be an active principle in tetrahydrocannabinol responsible for typical effects in humans [(=) Δ^9=trans=tetrahydrocannabinol, labeled "Δ^9=THC," equivalent to Δ^1=THC] has only recently been identified and quantified so that definitive research can be done,[25] and second, of the rigid legal controls of and general beliefs about cannabis.

In animals, some of the various forms of tetrahydrocannabinol and its derivatives and synthetics, administered orally or intravenously, may produce vomiting, diarrhea, tremor and ataxia, depressed blood pressure and respiration and moderately increased heart rate. In man, increased pulse rate, a slight rise in blood pressure and in blood sugar, increased frequency of urination, dilation of the pupils and a reddening of the eyes resembling conjunctivitis, dryness of the mouth and throat, and occasionally nausea, vomiting and diarrhea are usually reported. It is interesting that regardless of the route of administration Δ^9=THC causes no significant dilation of the pupil and no changes in respiratory rate or blood pressure. Increased pulse rate and conjunctivitis are observed after large doses.[26]

The subjective or psychological effects of cannabis, particularly at lower dosage levels, are dependent on the personality of the user, his expectations, and the circumstances under which he takes the drug. The effects of marihuana, even more than those of many other drugs, are variable in different individuals and in the same individual at different times. "The subjective effects are exquisitely dependent, not only on the personality of the user but also on the dose, the route of administration, and the specific circumstances in which the drug is used." [27] The effects are also a function of learning to smoke properly, of being tutored in recognizing and labeling effects, and of becoming sensitized to the effects.[28] In most individuals, these effects are pleasurable at low dosage levels and unpleasant at higher dosage levels. Common effects have been variously described as a feeling of contentment and inner satisfaction, free play of the imagination, exhiliration of spirit, the feeling of floating above reality, ideas disconnected, uncontrollable and free-flowing, minutes seeming like hours, space broadened, near objects seeming distant, uncontrollable laughter and hilarity. This may be followed by moody reverie, with or without depression. In some individuals and under some circumstances the depression may be the initial response and be followed by the "high." At higher dosage levels extremely vivid hallucinations may occur, with the content highly dependent on the personality of the individual.

Clinical uses.—Because of the attitudes toward cannabis and all of its derivatives prevalent in this country since the late 1930's and its linking with opium, morphine and heroin, and because it is legally not available to physicians to prescribe or, in effect to study, there are no legally acceptable clinical uses. Some research has been done with synthetic tetrahydrocannabinol; it has been shown to be useful as a euphoriant for depressive mental states [29] and in the treatment of alcoholic and drug withdrawal conditions,[30] and there have been, prior to the passage of the Marihuana Tax Act of 1937, clinical reports of its effectiveness as an antibiotic, as a safe analgesic, in the treatment of headache and migraine, of dysmenorrhea and menorrhagia, in labor during childbirth, and as a diagnostic aid in some psychiatric illnesses.[31] It has also been suggested as the drug of choice in the treatment of loss of appetite and mild depression in the elderly.

Idiosyncratic and toxic reactions.—There are widespread and lurid accounts of chronic intoxication in the Far East and the Middle East, but Bouquet states: "Many hemp smokers in North Africa confine themselves to relatively slight doses and frequency of absorption; they smoke, daily, 6 or 8 pipes of hemp, as we smoke 10 to 20 tobacco cigarettes. If they confine themselves to this, there is no danger." [32] Dr. Bouquet felt strongly that such statements as this and those made by Allentuck and Bowman [33] in the LaGuardia report, to which he was responding, were safe in medical circles but that they would be misinterpreted by the public. "The use of marihuana must be prohibited on the same grounds as that of opium and the manufactured narcotics and the social interest of the civilized countries demands that the strictest prohibition measures be taken and enforced." [34]

Like most other psychoactive drugs, cannabis may produce acute toxic reactions in some individuals at high dosage levels. Some of these reactions may, in rare instances, occur in some individuals at lower dosage levels. At a physiological level, acute toxic reactions such as those observed with high dosage levels of drugs such as alcohol, amphetamines, barbiturates and many other drugs are virtually nonexistent. No lasting ill effects and no fatalities have been reported.[35] Acute toxic psychotic reactions have been observed, primarily in predisposed individuals and/or with high dosage levels of potent forms of tetrahydrocannabinol. It is relevant to note that the two major scientific studies of the effects of tetrahydrocannabinol used prisoners as subjects. The LaGuardia Committee report [36] used prisoners from penitentiaries in New York City, some of whom were ex-opiate addicts, and the recent study by Isbell and others [37] used ex-opiate addicts serving sentences at the USPHS hospital in Lexington, Ky. Inasmuch as it is clear that the response to psychoactive drugs is in part a function of the psychological characteristics of the individual, neither of these samples provides an ideal basis for generalization to a normal population.

Of the 77 subjects studied by the LaGuardia Committee, nine reacted with "psychotic" episodes. Of these, five had never had experience with marihuana and four were occasional users. These reactions occurred to doses between 2 cc. and 8 cc. administered orally. No toxic psychotic reations occurred when larger (8 to 22 cc.) doses were administered orally, or when the drug was smoked. Moreover, no such reactions were found in subjects who had been regular marihuana users. Of the nine with psychotic episodes, two were heroin addicts of long standing, one had a history of epilepsy and one was diagnosed as a psychopathic personality. Except for euphoria, which occurred in virtually all subjects at all dosage levels, all psychological reactions occurred primarily in nonusers. In contrast, physical symptoms showed no consistent differences between users and nonusers. "Although urged to smoke more, no subject could be persuaded to take more than he knew or felt he could handle." [38]

In the Isbell studies the subjects were "physically healthy male former opiate addicts who were serving sentences for violations of the U.S. Narcotics Laws * * * were between 21 and 40 years of age * * * and, except for evidence of character disorder, were psychiatrically normal. * * * They were all experienced users of marihuana as well as of other drugs.[39]

The recent studies by Isbell and others with natural tetrahydrocannabinol extract of exactly known structure, Δ^1-THC (1-Δ3,4 trans-tetrahydrocannabinol), clearly indicate that subjective reaction is related to dosage level. At dosage levels of 50 micrograms per kilogram of body weight [40] by smoking and 100 mcg/kgm orally, all patients identified the effects of Δ^1-THC as being similar to those of marihuana. At dosage levels of 25 mcg/kgm by smoking or 75 mcg/kgm orally, labeled "threshold doses," the most common responses were alterations in mood, reports of feeling happy, gay, silly and relaxed. With higher dosage levels (100 mcg/kgm by smoking or 240 mcg/kg orally), color seemed brighter, hearing keener, the body felt lighter and alterations in time perception were frequently reported. At still higher dosage levels (200 mcg/kgm by smoking or 360 mcg/kgm orally), all of the above subjective effects were more pronounced and a majority of the subjects reported changes in body image, illusions, delusions, and hallucinations—toxic reactions which occur with excessive dosage levels of many chemicals which affect the central nervous system.

These authors note that "Psychotic reactions after smoking marihuana under the usual conditions in the United States appear to be rare but the low incidence of such psychotic breaks may reflect nothing more than the low tetrahydrocannabinol content of most of the marihuana available in the United States. In addition experienced smokers may be able to titrate the degree of effect and to avoid doses sufficient to cause psychosis." [41] They also note that, even with high dosage levels which did produce psychotomimetic effects, most patients retained insight and ascribed these effects to the drug.

It should be noted that the effects ascribed to "threshold" doses in these studies are those most often sought and described by casual smokers of marihuana and are not unlike those experienced by many individuals under the influence of reasonable amounts of alcohol—happy, gay, silly, relaxed. It should be noted also that the dosage level is more or less completely under the control of the user and, indeed, is carefully controlled by most users to produce the exact degree of "high" they seek. Those who, for a variety of reasons, seek more profound changes may attain such states through sufficiently high dosage levels of any of a variety of substances—cannabis, alcohol, amphetamine, LSD, mescaline, chloroform, carbon dioxide, or through fasting or sensory deprivation.

Tolerance and dependence.—There is general agreement that repeated use of the less potent forms of cannabis, as in the smoking of marihuana, leads rarely, if ever, to physical dependence or to craving for the drug and that it may produce slight tolerance.[42] One study has reported development of tolerance to repeated administrations of a potent synthetic after 4 to 6 days.[43] Heavy use of the more potent forms of cannabis has not yet been reported in the United States but does occur in diverse patterns in India, Africa, and the Middle East, where it is reported to lead occasionally to psychological dependence manifested by a craving for the drug and by unpleasant but relatively trivial withdrawal symptoms after prolonged, excessive use.[44] One study reports more severe withdrawal symptoms in nine Indian soldiers being transported from India to a campaign in another part of the Far East; all were sent back to India. [45]

Behavioral and social considerations.—Cannabis has long been linked with the opiates and has served as a scapegoat for many of the ills of societies around the world. It has been designated a cause for criminal behavior, addiction to heroin, psychoses, mental deterioration, apathy, decrements in work performance, and traffic accidents. Careful investigation does not substantiate any of these causal claims.

Although high dosage levels of potent forms of cannabis may produce toxic psychotic episodes lasting from a few hours to a few days, most evidence indicates that true psychoses of appreciable duration occur only in predisposed individuals. There is no reliable evidence that cannabis causes crime other than that involved in acquiring or possessing the drug, although criminals may use cannabis. Although many heroin addicts have used cannabis, they have more frequently used alcohol before using either heroin or cannabis and the large majority of cannabis users do not progress to heroin. People who become seriously involved with any drug often become involved with many drugs. Serious drug involvement, including involvement with alcohol, is seldom consistent with serious involvement with work. Data with respect to traffic accidents are lacking although many experienced users of cannabis concede that a person who is "stoned" should not drive.[46]

The story of marihuana is not yet written. Absence of reliable evidence cannot be the final answer. Good, controlled research, both laboratory and field studies, is desperately needed. It will not be easy to do such research as long as the mere possession of the drug is a misdemeanor or a felony and as long as it is believed to be so dangerous that it can be administered experimentally only to prisoners and exaddicts. Cannabis, like most drugs, may be toxic and dangerous at some dosage levels in some people under some circumstances. When cannabis is compared with alcohol, amphetamines, barbiturates, nicotine, opiates and many other drugs its potential for risk and for abuse appears to be relatively low but it is urgent that first-rate studies on this question be done. In order to produce dependable data, such studies must be designed with proper consideration of the many complex factors which contribute to drug effects and to repeated use of a drug. These include the purity and amount of the drug, the physiological and psychological state of the user, his beliefs, personality characteristics and life history, the setting and the relevant characteristics of the experimenter or supplier.

Hallucinogens—II. Lysergic acid diethylamide (LSD)

Lysergic acid diethylamide is presently one of the most potent of a class of drugs classified variously as psychotogenic, psychotomimetic, hallucinogenic or psychedelic, depending in part on one's attitude toward these drugs. Jarvik[47] in Goodman and Gilman, classifies it, within a group of "drugs used in the treatment of psychiatric disorders," as psychotogenic in a broad sense of the word; legally it is classified as a hallucinogen, despite the fact that it only rarely produces true hallucinations. Among some psychiatrists and a variety of professionals, in addition to members of the drug culture, it is referred to as a psychedelic (literally, mind-manifesting).

General description.—Pharmacologically, some of its effects would place LSD in a group of drugs classified as sympathomimetic; i.e., producing effects ordinarily produced by the sympathetic nervous system—increased pulse and heart rate, a rise in blood pressure, pupillary dilation, tremors of the extremities, cold sweaty palms, flushing, shivering, chills with goose pimples, pallor, increased salivation, periods of irregular respiration, nausea, loss of appetite, urgency of urination, and increase in deep tendon reflexes and body temperature.[48] About these effects there is little controversy, but they are insignificant for most individuals at dosage levels normally used in humans. If these were the only effects, there would probably be no controversy about LSD. It is the psychological effects of the drug which have made it interesting to the psychopharmacologist, the neurochemist and the psychologist and controversial to the physician, the psychiatrist and the general public. "* * * They have a unique controversogenic property. It has even been claimed that these drugs (LSD, psilocybin, mescaline) have as much effect on investigators working with them as on those who ingest them." [49]

D-lysergic acid diethylamide is an alkaloid which is synthesized from lysergic acid which is in turn a component of some natural alkaloids of ergot. Ergot is a parasitic fungus which grows as a rust on grain, especially rye and wheat. Lysergic-acid-containing compounds are also found in certain varieties of morning glory, apparently produced by the plant itself rather than by the parasitic fungus.

Ergot has been recognized as a highly toxic substance since A.D. 994 when a major epidemic resulting from infected flour or feed resulted in the deaths of approximately 40,000 people in France. Ergotism, or ergot poisoning, appears in two forms, gangrenous ergotism, in which tingling in the fingers, vomiting, and diarrhea occur, followed by gangrene in fingers and toes or in whole limbs, and convulsive ergotism, in which the early symptoms are followed by painful contraction of the muscles of the extremities culminating in epilepticlike convulsions.[50] Black-market LSD, if impure, may also have poisoning effects because of contamination by other ergot alkaloids.

D–LSD was synthesized by Stoll and Hoffman at Sandoz Pharmaceuticals in Switzerland in 1938. Pharmacological studies of d–LSD did not reveal anything of particular interest. However, 5 years later, Hoffman accidentally discovered its potent psychological effects while investigating its properties as a central cardiovascular stimulant in combination with a coraminelike substance. It was later tested by Stoll in the psychiatric clinic of Zürich University and Hoffman's report of dizziness, restlessness, striking perceptual and cognitive effects was verified. Stoll characterized the drug as producing a temporary psychosis and until the early fifties it was studied primarily as a psychotomimetic.

D-lysergic acid diethylamide is unusual in many respects but primarily because of its potency. Doses as low as 25 micrograms (.000025 grams) are capable of producing psychological effects in susceptible individuals. The "normal" dosage level is 100 to 250 micrograms. The tremendous potency can be dramatized by pointing out that an amount of LSD equivalent to two aspirin tablets would provide 6,500 100-microgram doses.

The site and mode of action of LSD are still matters of speculation. It is usually taken orally and is rapidly absorbed and widely distributed in the body. When large doses (still very, very small) are administered a high proportion is concentrated in the liver and relatively little in the brain. At relatively low dosage levels (between 100 and 500 micrograms) there does not seem to be a clear relationship between intensity of experience and dosage level. Physiologic changes, however, do seem to be dose-related. At higher dosage levels time of onset may be shorter and perceptual changes more intense but adverse reactions such as paranoia and depression are apparently not dose-related.

Although there are a number of theories of how LSD acts, none is clearly supported by what is now known about the central nervous system and the action of the drug. There is fairly general agreement that LSD exerts some influence on many cells, tissues and organs of the body and, in some way, affects the transmission of nerve impulses from one neuron to another at the synapse. It could directly block energy production, alter cell-membrane permeability, increase permeability of the blood-brain barrier, allowing toxic substances present in the blood stream to enter the nervous system, or inhibit or facilitate the direct action of neuro-hormones present in the brain. It could also act indirectly by producing a major change in some other major biochemical system which produces or controls substances essential to the functioning of the central nervous system. The action of the drug may be a combination of direct and indirect factors. Advances in understanding of the electrophysiological and biochemical functioning of the brain will help explain the action of LSD and LSD is a potent tool in studying these functions.[51]

It is the psychological effects of LSD which are often profound. It is appropriate before discussing them to point out again that there are no uniform, reliable effects in all individuals. The effects are highly dependent on the dose, the physiological and psychological state of the individual, the setting in which it is taken, the tasks set for and by the individual, the reasons why he took the drug, his expectations, and the expectations of the person who administered the drug. It is highly personal experience. With this caution in mind, we can describe a number of general characteristics of the experience.

Perceptual changes may be dramatic. Of all of the senses, vision seems to be most affected. Objects and patterns may seem to come alive and shift or become wavy, colors may seem very vivid, intense and beautiful, white light may seem much brighter with numerous colors surrounding it. Colors may be experienced as emotionally meaningful. Depth and figure-ground relationships are altered so that texture becomes important and fascinating. Taste, smell, hearing and touch may seem more acute. The experience of listening to music may be richer than ever before. True hallucinations are relatively rare. Pseudohallucinations are frequent; although the individual has a visual experience with no appropriate sensory cues, he is usually well aware of the fact that it is subjective and is a result of the drug. The more structured of these experiences often consist of dream-like sequences or fantasies related to previous life experiences. They may be pleasant or horrible.

Intensification of experience may be facilitated by the occurrence of synesthesia, the translation of one type of sensory experience into another. This may result in hearing or feeling light or color, seeing sounds, feeling music. Color may be emotion or mood.

Emotional and cognitive effects are extremely complex and, except in the very experienced, may seem capricious and highly dependent on events in the physical and social environment. Rapid shifts of emotion and extreme mood swings are common with profound depression, anxiety, terror, euphoria, serenity, and ecstasy all occurring within the 8 to 14 hours of the "trip." Suspiciousness or hostility may also develop.

In the area of cognitive behavior, there is no loss of consciousness and the individual usually remembers, in many instances very vividly, what happens. Many individuals can think and function adequately when pressed to do so. They just prefer not to do so. Thoughts may move much more rapidly than usual and the individual may find it very easy to deviate from normal logic and normal causal relationships. Past, present and future may become confused. There may be depersonalization and distortion of the body image reminiscent of "Alice in Wonderland." Such distortion may be amusing or bizarre and frightening. Most experiences under LSD assume an increased sense of meaning and an increased sense of importance.

Proponents of LSD stress the powerful emotional and philosophical-religious impact of the experience, which they see as beneficial to the individual and, in the long run, to society.[52] Opponents stress the bad effects, referred to by proponents as side effects. That there are reactions which most people would consider bad, there is no question. That these effects are in reality bad has been questioned. Some would argue that only people who have basic personality problems have bad trips and that bad experiences may be the basis of the meaningful rebuilding or therapy.

Idiosyncratic and toxic reactions.—These adverse reactions have been summarized by a number of careful investigators using widely differing samples. It should be emphasized that there is no way of knowing in what proportion of cases adverse reactions occur because no one has any reasonable basis for estimating the number of persons who have taken LSD, particularly within the past year since authorized research studies have been temporarily reduced while procedures for making the drug available for approved research were being implemented. Thus, virtually all available LSD is illegal and is taken outside of research or medical settings. All would agree that taking LSD under less than ideal circumstances increases the probability of "bad trips." In 1960, Sidney Cohen [53] surveyed 44 investigators who had among them given 25,000 doses of either LSD or mescaline to about 5,000 individuals. Adverse effects were rare. The most common of these during the LSD session were unmanageability, panic or severe physical complaints. There were no serious physical side effects reported. The most common prolonged adverse effect was short-lived depression. Five of the 5,000 attempted suicide and four completed suicide many months after the LSD experience. Since most of the 5,000 were serious psychiatric cases, addicts, alcoholics, psychopaths or persons with depressions, this has been noted as a remarkably low suicide rate. In view of this fact that most of the LSD now being used is obtained illegally and of questionable purity and potency and the use has spread to very heterogeneous groups, Cohen now feels that his 1960 survey suggesting low frequency of adverse reactions in individuals receiving the drug under controlled experimental or therapeutic conditions does not apply to indiscriminate use. In another series, Cohen and Ditman[54] reported a number of prolonged psychotic reactions. Other studies[55] of hospitalized individuals have reported series of 120 and 85 cases involving temporary or prolonged psychoses, acting out of sociopathic disorders and homosexual impulses, suicidal inclinations, overt manifestations of latent psychoses and reappearance of the perceptual and emotional reactions of the drug experience with accompanying panic. Unfortunately, there are few specifiable characteristics of the individual which would serve as predictors of a bad reaction. Psychotics or prepsychotics should not be given the drug although there is some evidence that it may be helpful in the treatment of autistic (schizophrenic) children.[56]

Among the adverse reactions which may occur in some individuals are acute panic and extreme fright as a result of feeling that the individual can no longer control the effects of the drug, poor judgment leading to actions which may get the individual into trouble or cause injury or death, and what appear to be fairly basic personality changes which may result in an individual being less concerned with goals and activities which society as a whole values and getting caught up in the drug culture or dropping out of school.

Within the past few months conflicting evidence[57] regarding possible toxic effects on certain cells of the body has begun to appear. These early reports need to be verified on large and appropriate samples with proper controls, and the changes observed need to be related to the functioning of various systems in the body. The appearance of broken chromosomes or Philadelphia chromosomes in leukocytes cultured in the test tube with LSD added and in blood samples from individuals who have taken LSD does not necessarily mean that such individuals will become victims of leukemia or produce malformed offspring. It does, however, mean that we must proceed with all haste to do the adequate, controlled studies which will answer these questions, and that we had better look beyond the present pharmacological toxicity studies and tests of therapeutic efficacy in assessing the myriad of increasingly potent substances which are emerging from laboratories in pharmaceutical houses and medical centers. It is certainly reasonable to hypothesize that any substance which closely resembles endogenous substances, which affects many systems, which is potent in infinitesimal amounts, which has its main effects long after it seems to have been eliminated from the central nervous system has important effects throughout the body.

Aspirin

Aspirin is one of the two most commonly used preparations of salicylate, a substance first derived by the ancients from willow bark and synthesized in 1860. It is widely used in medicine and is indiscriminately used by the general public for almost anything that ails you. About 27 million pounds of aspirin are produced annually in the United States. This amount has been estimated as sufficient to treat over 17 billion headaches.

General characteristics.—Aspirin has effects on almost every major system in the organism. It acts on the central nervous system to influence the balance between the production and loss of body heat, to alleviate certain types of pain because of selective depressant effect by mechanisms not yet understood, to increase both the depth and rate of breathing, with resultant effects on blood pH and plasma P_{CO_2}, resulting in respiratory acidosis and metabolic acidosis. In large doses, it depresses the circulation directly and by central vasomotor paralysis. In the gastrointestinal system it may result in distress, nausea and vomiting. In high doses, it may, in some individuals, cause gastric ulcers and gastric bleeding. It has effects, minor at low dosage levels, on the liver, kidney and blood, and a multiplicity of effects on metabolic processes, notably oxygen uptake, carbohydrate, nitrogen and fat metabolism. It directly or indirectly influences the function of a number of endocrine systems and decreases the activity of a large number of enzymes.

After absorption salicylate is rapidly distributed throughout all body tissues and most transcellular fluids. It is metabolized chiefly in the liver and excreted mainly by the kidney.

Idiosyncratic and toxic reactions.—In statistics reporting hospital admissions classified as resulting from drug-induced disturbances, asprin is often the most frequent cause. Salicylate poisoning can result in death and the drug should not be viewed as a harmless household remedy. The toxicity of the salicylates is underestimated by both the laity and physicians.[58] There were 5,700 poison cases in Florida in 1966, of which 418 were reported by the four hospitals in Pinellas County. Of these 418, 199 were cases of poisoning from internal medicine and 92 were from aspirin.[59]

At excessively high dosage levels or as result of individual idiosyncrasy, acute poisoning may occur. Headache, dizziness, ringing in the ears, difficulty in hearing, dimness of vision, mental confusion, lassitude, drowsiness, sweating, thirst, nausea, vomiting and occasionally diarrhea may occur. As poisoning progresses central stimulation is replaced by depression, stupor and coma, followed by respiratory collapse and convulsions. Salicylate poisoning is considered an acute medical emergency and death may result even when all recommended procedures are followed. In persons with hypersensitivity to aspirin, skin rashes, asthma, swelling of the eyelids, tongue, lips, face and intestinal tract are not uncommon. Asthma constitutes the chief manifestation and may result in death. Aspirin may cause mild hemolytic anemia in individuals with certain blood deficiencies.

"After doses close to lethal for the embryo and highly toxic to the mother, teratogenic effects occur in experimental animals; malformations are produced by treatment with salicylate during early stages of development. However, there is no evidence that therapeutic doses of salicylates cause fetal damage in human beings, and their use during pregnancy does not appear to be contraindicated." [60]

Notes

[1] Goodman, L. and Gilman, A., *The Pharmacological Basis of Therapeutics.* New York: Macmillan, 1965, p. vii.

[2] Ibid., p. ix. (reprinted from 2d edition).

[3] Borgstedt, H. H., "Drugs of abuse—1966." *NASPA: The Journal of the National Assn. of Deans & Administrators of Student Affairs,* 1967, *4,* 109.

[4] Blum, R. H., "Mind-altering drugs and dangerous behavior: dangerous drugs." In: *Task Force Report: Narcotics and drug abuse.* The President's Commission on Law Enforcement and the Administration of Justice. Washington: Government Printing Office, 1967.

[5] Orne, M. T., "On the social psychology of the experiment." *American Psychologist,* 1962, *17,* 776–783.

[6] Medical Society of the County of New York. *New York Medicine,* May 1966.

[7] Fort, J. "The problem of barbiturates in the United States of America." *Bull. Narcotics,* 1964, *16,* 17–35. Janssen, B., "Drug-automatism as a cause of pseudo-suicide." *Postgrad. Med.,* 1961, *30,* A34–A40.

[8] Blum, R. H., op. cit.

[9] If blood or urine samples are obtained, both the particular barbiturate and the amount ingested can be determined by gas-liquid chromatography analysis. Several state toxicology laboratories do use this method but it is not appropriate for on-the-spot field test. It takes approximately 1 hour to complete.

[10] Jellinek, E. M., *The Disease Concept of Alcoholism.* New Haven: College and University Press, 1960.

[11] Jaffe, J. H., "Drug Addiction and Drug Abuse." In Goodman, L. and Gilman, A. (editor), *The Pharmacological Basis of Therapeutics*, p. 296.

[12] Cisin, I. and Callahan, D. Social research project: National survey of drinking. George Washington University: Unpublished Manuscript, 1966. Plaut, T. F. A., *Alcohol Problems.* A Report to the Nation by the Cooperative Commission on the Study of Alcoholism. New York: Oxford University Press, 1967.

[13] Kety, S. S., "Research programs in the major mental illnesses." *Hosp. & Comm. Psychiat.*, 1966, *17*, 226–232.

[14] Oswald, I. and Thacore, V. R., "Amphetamine and phenmetrazine addiction: Physiological abnormalities in the abstinence syndrome." *Brit. Med. J.*, 1963, *2*, 427–431.

[15] Connell, P. H., "Amphetamine misuses." *Brit. J. Addict.*, 1964, *60*, 9–27.

[16] Kramer, J. C., Fischman, V. S., and Littlefield, D. C., "Amphetamine abuse: pattern and effects of high doses taken intravenously." *J.A.M.A.*, 1967, *201*, 305–309.

[17] Kalant, O. J., *The Amphetamines: Toxicity and Addiction.* Springfield, Ill: Chas. C. Thomas, 1966, ch. V.

[18] Schremly, J. A. and Solomon, P., "Drug abuse and drug addiction reporting in a general hospital." *J.A.M.A.* 1964, *139*, 512–514.

[19] Whal, C. W., op. cit. (ch. II).

[20] Weiss, B. and Laties, V. G., "Enhancement of human performance by caffeine and the amphetamines." *Pharmacol. Rev.*, 1962, *14*, 1–36.

[21] Laties, V. G. and Weiss, B., "Performance enhancement by the amphetamines: A new appraisal." Proceedings of the 1966 Collegium Internationale Neuro-Psychopharmacologie. Excerpta Medical Press, 1967.

[22] Bouquet, J., "Marihuana intoxication." *J.A.M.A.*, 1944, *124*, 1010–1011.

[23] Wohlenstone, G. E. W. and Knight, J. (editor), *Hashish: Its chemistry and pharmacology.* Ciba Foundation Study Group #21. London: 1964, p. 52.

[24] Isbell, H. et al., "Studies on tetrahydrocannabinol. I. Method of assay in human subjects and results with crude extracts, purified tetrahydrocannabinols and synthetic compounds." University of Kentucky Medical Center: Unpublished manuscript, 1967.

[25] Isbell, H. et al., "Effects of (-) Δ^9-*Trans*-Tetrahydrocannabinol in Man." *Psychopharmacologia* (Berl.), 1967, *11*, 184–188.

[26] Ibid.

[27] Jaffe, J. H., op. cit., p. 300.

[28] Becker, H. *The Outsiders.* Glencoe, Ill.: The Free Press, 1963.

[29] Stockings, G. T., "A new euphoriant for depressive mental states." *Brit. Med. J.*, June 28, 1947. Reprinted in *The Marihuana Papers*, D. Solomon, editor. Indianapolis, Kansas City and New York: Bobbs-Merrill, 1966, pp. 367–379.

[30] Thompson, L. J. and Proctor, R., "Pyrahexyl in the treatment of alcoholic and drug withdrawal conditions." *No. Carolina Med.* J., October 1953. Reprinted in *The Marihuana Papers*, op. cit.

[31] Walton, R., "Therapeutic application of marihuana." Reprinted in *The Marihuana Papers*, op. cit. (Walton, R. P., *Marihuana: America's New Drug Problem.* New York: Lippincott, 1938.)

[32] Bouquet, J., op. cit., p. 1010.

[33] Allentuck, S. and Bowman, K., "Psychiatric aspects of marihuana intoxication." *Amer. J. Psychiat.*, 1942, 99 (2). Reprinted in: Solomon, D. (editor), *The Marihuana Papers*. New York: Bobbs-Merrill, 1966.

[34] Bouquet, J., op. cit., p. 1010.

[35] Jaffe, J. H., op. cit.

[36] "The Marihuana Problem in the City of New York." Mayor La Guardia's Committee on Marihuana: Jaques Cattell, 1944. Reprinted in *The Marihuana Papers*, op. cit.

[37] Isbell, H. et al., op. cit.

[38] Allentuck, S., "Medical aspects: symptoms and behavior." In La Guardia Committee on Marihuana. (*The Marihuana Papers*, op. cit., p. 276.)

[39] Isbell, H. et al., op. cit. (24), p. 4.

[40] A man weighing 155 lbs. weighs approximately 70 kgm and would thus receive a dose of approximately 3.5 mg. or 3500 mcg.

[41] Isbell, H. et al., op. cit. (24), p. 20.

[42] Jaffe, J. H., op. cit.

[43] Williams, E. G. et al., "Studies on marihuana and pyrahexl compound." (*Public Health Repr.*, 1964, *61*, 1059–1083.)

[44] Chopra, I. C. and Chopra, R. N., "The use of cannabis drugs in India." *Bull. on Narcotics*, 1957, *9* (1), 4–29. Benabud, A., "Psycho-pathological aspects of the cannabis situation in Morocco: Statistical data for 1956." *Bull. on Narcotics*, 1957, *9* (4), 1–16.

[45] Fraser, J. D., "Withdrawal symptoms in cannabis indica addicts." *Lancet*, Oct. 22, 1949, pp. 747–748.

[46] Blum, R. H., "Mind-altering drugs and dangerous behavior: dangerous drugs." In: *Task Force Report: Narcotics and Drug Abuse*, op. cit.

[47] Jarvik, M., "Drugs used in the treatment of psychiatric disorders." In Goodman and Gilman, op. cit.

[48] Ludwig, A. M. and Levine, J., "The clinical effects of psychedelic agents." *Clin. Med.*, 1966, *73*, p. 22.

[49] Ibid., p. 21.

[50] Hoffer, A., "D–Lysergic acid diethylamide (LSD): A review of its current status." *Clin. pharmacol. Ther.*, 1965, *6*, 183–225.

[51] Ibid.

[52] Alpert, R., "Roundtable on LSD." *NASPA Drug Education Project Background Paper*, 1966.

[53] Cohen, S. et al., "Prolonged adverse reactions to LSD." *Arch. Gen. Psychiat.*, 1963, *8*, 475–480.

[54] Cohen, S. and Ditman, K., "Complications associated with LSD–25." *J.A.M.A.*, 1962, *181*, 161–162.

[55] Frosch, W. A., Robbins, E. S., and Stern, M., "Untoward reactions to lysergic acid diethylamide (LSD) resulting in hospitalization." *New Engl. J. Med.*, 1965, *273*, 1235–1236.

[56] Bender, L., Faretra, G., and Cobrinik, L., "LSD and UML treatment of hospitalized disturbed children." In: Wortis, J., editor, *Recent Advances in Biological Psychiatry*, vol. 5. New York: Plenum Press, Inc., 1962, pp. 84–93. Bender, L., Goldschmidt, L., and Sankar, D. V. S., "Treatment of autistic schizophrenic children with LSD–25 and UML–491." In: Wortis, J., editor, *Recent Advances in Biological Psychiatry*, vol. 4. New York: Plenum Press, Inc., 1962, pp. 170–177.

[57] Cohen, M. et al., "Chromosomal damage in human leukocytes induced by lysergic acid diethylamide." *Science*, 1967, *155*, 1417–1419. Irwin, S. and Egozcue, J., "Chromosomal abnormalities in leukocytes from LSD–25 users." *Science*, 1967, *157*, 313–314, Alexander, G. J. et al., "LSD: Injection early in

pregnancy produces abnormalities in offspring of rats." *Science*, 1967, *157*, 459–460. Auerbach, R. and Rugowski, J. A., "Lysergic acid diethylamide: Effect on embroyos." *Science*, 1967, *157*, 1325–1326. Loughman, W. D., Sargent, T. W., and Israelstam, D. M., "Leukocytes of humans exposed to Lysergic acid: Lack of chromosomal damage." *Science*, 1967, *158*, 508–510. Zellweger, H., McDonald, J. S., and Gisela, A., "Is Lysergic-Acid diethylamide a teratogen?" *Lancet*, 1967, Number 7525, 1066–1068.

[58] Woodbury, D. M., "Analgesics and antipyretics." in Goodman, L. and Gilman, A., op. cit., p. 326.

[59] Ogle, D. K., executive director, Pinellas County Medical Society. As reported in *St. Petersburg Independent*, Mar. 29, 1967, p. 9–A.

[60] Woodbury, D. M., op. cit., p. 328.

DRUGS ON THE COLLEGE CAMPUS: APPENDIX

GLOSSARY

addiction (drug)

a state of periodic or chronic intoxication produced by the repeated consumption of a drug (natural or synthetic). It is generally assumed to include: (1) an overpowering desire or need (compulsion) to continue taking the drug and to obtain it by any means; (2) a tendency to increase the dose; (3) a psychic (psychological) and generally a physical dependence on the effects of the drug; (4) detrimental effect on the individual and on society. Because of its combining of compulsion, tolerance, physical dependence, psychological dependence and detrimental effects, it is not a useful term and should be discarded.

"blind"

a term used in research to indicate that the patient or subject does not know what drug is being administered so that any prior expectations of effects of the drug he may have do not influence his response.

"double blind"

a term used in research to indicate that neither the patient or subject nor the experimenter know which of several drugs or placebo is given on any occasion. Considered a necessary condition if results are attributed to the effects of the drug as pharmacologic agent.

dependence (drug)

a state of psychic or physical dependence, or both, on a drug, arising in a person following administration of that drug on a periodic, or continuous basis. The characteristics of such a state will vary with the agents involved, and these characteristics should always be made clear by designating the particular type of drug dependence in each specific case.

dependence (physical)

an adaptive state that manifests itself by intense physical disturbances when the administration of the drug is suspended or when its action is affected by the administration of a specific antagonist. Presence of a reliable withdrawal syndrome is considered evidence of physical dependence.

dependence (psychic)

a feeling of satisfaction and a psychic drive that require periodic or continued administration of the drug to produce pleasure or to avoid discomfort; usually does not involve physiological withdrawal symptoms.

depressant

any agent that will depress (decrease) a body function or nerve activity. Depressants may be classified according to the organ or system upon which they act.

CNS depressant

medical: any agent that will depress the functions of the central nervous system.

"CNS depressant"

legal: a drug which may produce any of the following: (1) calming effect or relief of emotional tension or anxiety; (2) drowsiness, sedation, sleep, stupor, coma or general anesthesia; (3) increase of pain threshold; (4) mood depression or apathy; disorientation, confusion or loss of mental acuity. (Regulations under the Federal Food, Drug, and Cosmetic Act, January 1966.)

endogenous

produced within the cell or the organism.

habituation

drug: a condition resulting from the repeated consumption of a drug. Its characteristics include: (1) a desire (but not a compulsion) to continue taking the drug for the sense of improved well-being which it engenders; (2) little or no tendency to increase the dose; (3) some degree of psychic dependence on the effect of the drug, but absence of physical dependence and hence of an abstinence syndrome; (4) detrimental effects, if any, primarily, on the individual.

"habit forming drugs"

legal: a drug which may produce any of the following: (1) a psychological or physical dependence on the drug (compulsive use); (2) euphoria (exaggerated sense of well-being); (3) personality changes; (4) transient psychoses, deliria, twilight state or hallucinoses; (5) chronic brain syndrome; (6) increased tolerance or a need or desire to increase the drug dosage. (Regulations under Federal Food, Drug, and Cosmetic Act, January 1966.)

hallucinogenic

medical: producing hallucinations—false perceptions having no relation to reality and not accounted for by any external stimuli; may be visual, olfactory, auditory, etc.

legal: a drug which may produce hallucinations, illusions, delusions, or alteration of any of the following: (1) Orientation with respect to time or place; (2) consciousness, as evidenced by confused states, dreamlike revivals of past traumatic events or childhood memories; (3) sensory perception, as evidenced by visual illusions, synesthesia, distortion of space and perspective; (4) motor coordination; (5) mood and affectivity, as evidenced by anxiety, euphoria, hypomania, ecstacy, autistic withdrawal; (6) ideation, as evidenced by flight of ideas of reference, impairment of concentration and intelligence; (7) personality, as evidenced by depersonalization and derealization, impairment of conscience and of acquired social and cultured customs. (Regulations under Federal Food, Drug, and Cosmetic Act, January 1966.)

hypnotic

a drug which induces sleep; usually refers to drugs which induce normal sleep but may include all narcotics (medical).

narcotic

medical: a class of drugs which induce sleep and stupor and relieve pain; includes opiates, anesthetics, and others. Some pharmacologists include barbiturates although they do not relieve pain.

legal: opium, its alkaloids and derivatives; the coca leaf and its principal derivative, cocain; the plant cannabis sativa L. otherwise known as marihuana; and a specific class of synthetics called opiates such as meperidine (Demerol) and methadone.

opiate

a class of drugs which have the properties and actions of opium, includes opium itself and derivatives of opium as well as synthetic opiatelike drugs not derived from opium.

placebo

medication composed of pharmacologically inactive ingredients (saline solution, lactose, etc.) used as a control in drug research. Used in the same form as the drug for which it is being used as a control (capsule, tablet, solution, etc.).

potentiation

the effect on the body of two drugs, particularly those with sedative properties, which is greater than the sum of the effects of each drug taken alone. One drug intensifies or potentiates the effects of the other. Potentiation may be useful in some cases but dangerous in others.

psychedelic

mind-manifesting or consciousness expanding. The term was invented to describe some of the effects of LSD and similar drugs. Refers mostly to same drugs as psychotomimetics or hallucinogens.

psychotogenic

tending to produce psychosis.

psychotomimetic

a term applied to drugs producing a temporary psychoticlike response.

side effect

a given drug often has many actions on the body. Usually one or two of the more prominent actions will be desired and will be effective in the treatment of a given condition. The other, usually weaker, effects are called side effects. They are not necessarily harmful, but may be annoying. What is a side effect in one instance may be desirable therapeutic effect in another, depending on the purpose for which the drug is taken.

stimulant

any agent temporarily increasing functional activity. Stimulants may be classified according to the organ or system on which they act.

CNS stimulant

medical: any agent that temporarily increases the activity of the central nervous system.

legal: a drug which may produce any of the following: (1) Extended wakefulness; (2) elation, exhilaration or euphoria (exaggerated sense of well being); (3) alleviation of fatigue; (4) insomnia, irritability or agitation; (5) apprehension or anxiety; (6) flight of ideas, loquacity, hypomania, or transient deliria. (Regulations under Federal Food, Drug, and Cosmetic Act, January 1966.)

synesthesia

subjective sensation of another sense than the one being stimulated, e.g., "hear" colors, "see" music.

teratogenic

producing the development of abnormal structures in an embryo.

tolerance

an adaptive state characterized by diminished response to the same quantity of drug or by the fact that a larger dose is required to produce the same degree of pharmaco-dynamic effect.

withdrawal syndrome (or symptoms)

physiological reactions following abrupt withdrawal of a drug after a period of prolonged and/or excessive use.

BIBLIOGRAPHY

I. Books

Blum, Richard H. and Associates. *Utopiates: The Use and Users of LSD–25.* New York: Atherton Press, 1964. A major study of LSD use in a variety of settings, and of users and nonusers. Also contains chapters on the psychopharmacological, legal and social aspects of LSD. A must!

Braden, William. *The Private Sea: LSD and The Search for God.* Chicago: Quadrangle Books, 1967. An interesting attempt to relate the LSD problem to current trends in religious thinking.

Chein, I., Gerard, D. L., Lee, R. S., and Rosenfeld, E. *The Road to H.* New York: Basic Books, 1964. A comprehensive sociological and psychological study of juvenile addicts in New York.

Cohen, Sidney. *The Beyond Within: The LSD Story.* New York: Atheneum, 1964. One of the early psychiatrists to explore the effects of LSD during the past 10 years presents reports on "good trips" and "bad trips," discusses "good" uses and "bad" uses.

Lindesmith, A. R. *The Addict and the Law.* Bloomington: Indiana University Press, 1965. Detailed study of existing U.S. laws, regulations, police practice, and court procedure relating to the "addict." The author's thesis is that our present system of narcotic control is both unjust to the addict and intensifies the problem.

Mayor's Committee on Marihuana. Lancaster, Pa.: Jaques Cattell Press, 1944. The marihuana problem in the city of New York: sociological, medical, psychological, and pharmacological studies. A classic which is now out of print but is reproduced almost in its entirety in Solomon, *Marihuana Papers.*

Solomon, David (Ed.). *The Marihuana Papers.* Indianapolis: Bobbs-Merrill Co., Inc., 1966. An important collection of papers. Although the predominant impact is not "anti-pot," the general excellence and diversity of papers should contribute to a further understanding of the use and abuse of this drug.

Uhr, L. and Miller, J. G. (Eds.). *Drugs and Behavior.* New York: John Wiley and Sons, 1960. Contributions by 53 research investigators. Part I: The methodological, chemical, biological and clinical context for psychopharmacology will provide a basis for understanding the current status of the study of the behavioral effects of drugs.

II. Paperbacks

DAEDALUS: Journal of the American Academy of Arts and Sciences. *Toward the Year 2000: Work in Progress.* Boston, summer 1967. Contains interesting articles by Erik Erikson on youth, by George Miller on psychological perspectives and by Gardner Quarton on the manipulation of human behavior by drugs and other methods.

de Ropp, R. S. *Drugs and the Mind.* New York: Grove Press, Inc., 1957 (Evergreen Black, Cat. No. BC–7). A biochemist writes dispassionately of mescaline and marihuana, the role of drugs in the study and treatment of mental illness, addiction to opiates, barbiturates and alcohol, and of the many naturally occurring substances which man has used over the centuries to affect the mind.

Drug Abuse: Escape to Nowhere. Philadelphia: Smith, Kline & French Laboratories, 1967. (In cooperation with the American Association for Health, Physical Education, and Recreation, a department of the National Education Association. Available from NEA publications and sales, 1201 16th Street NW., Washington, D.C. 20036, $2.) A "Guide for Educators"—secondary as well as college. A presentation from the medical and enforcement points of view.

ETC: A Review of General Semantics. San Francisco: International Society for General Semantics, December 1965. A special issue on the psychedelic experience, with a critical foreword by S. I. Hayakawa.

Faber, S. M. and Wilson, R. H. L. (Eds.). *Conflict and Creativity: Control of the Mind, Part II.* New York: McGraw-Hill, 1963. (McGraw-Hill, Paperback No. 19939). Articles by Isbell on the history of American attitudes toward addiction and by Beecher, Hollister and others on methodological problems in research on drugs.

Laurie, Peter. *Drugs.* Baltimore: Penguin Books, 1967. A good recent review by an English journalist.

Louria, D. *Nightmare drugs.* New York: Pocket Books, Inc., 1966 (No. 10157). A doctor writes passionately of heroin, sedatives, stimulants, tranquilizers, hallucinogens, addiction, the laws.

Peterson, Ernest. Psychopharmacology in J. A. Vernon (Ed.). *Introduction to Psychology:* A self-selection textbook. Dubuque, Iowa: W. C. Brown, 1966. A good discussion of the development of psychopharmacology, problems of classification, factors that modify drug effects, methodological principles and levels of explanation.

Senate Subcommittee on Government Reorganization, Hearings, Organization and coordination of Federal drug research and regulatory programs: LSD. (May 24, 25, and 26, 1966.) Expert testimony on many aspects of LSD use.

Solomon, D. (Ed.). *LSD: The Consciousness-Expanding Drug.* New York: Putnam, Berkeley Medallion Books, 1964 (No. N1277). Reprints of articles appearing in a variety of journals. Includes Cole, Katz, and Unger from references on hallucinogens.

Stafford, P. G. and Golightly, B. H. *LSD: The Problem-solving Drug.* New York: Award Books, 1967 (A221 SK). "Unless I have completely misunderstood the message, this book must be looked on as a manifesto from one generation to another. * * * The younger generation is telling us that it proposes to use psychedelics because it considers them appropriate instruments for living in the hurricane's eye of accelerating change." Humphrey Osmond in introduction.

Young, W. and Hixson, J. *LSD on Campus.* New York: Dell, 1966 (No. 5112). Two former science editors of Life and Newsweek, respectively, write a reasonably balanced journalistic account of drugs on the campus.

III. Selected Technical References[1]

A. *Dependency*

1. Ausubel, D. P. Some future directions for research in adolescent drug addiction. *Adolescence*, 1966, *1*, 70–78.
2. Blum, R. H. Mind Altering Drugs and Dangerous Behavior: Narcotics. *In Task Force Report: Narcotics and Drug Abuse.* President's Commission on Law Enforcement and Administration of Justice, pp. 40–63.
3. Bowman, K. M. Past, present and future in the treatment of drug addiction. *Compr. Psychiatry*, 1963, *4*, 145–149.
4. Brill, H. Misapprehensions about drug addiction: Some origins and repercussions. *Compr. Psychiatry*, 1963, *4*, 150–159.
5. Eddy, N. B. et al. Drug Dependence: Its Significance and Characteristics. *Bull. World Health Org.*, 1965, *32*, 721–731. (Available from NASPA Drug Education Project.)
6. Jaffe, J. H. Drug addiction and drug abuse. In Goodman, L. S. and Gilman, A. (Eds.). *Pharmacological Basis of Therapeutics* (3d Ed.). New York: Macmillan, 1965, chapter 12.
7. Lehman, H. E. Phenomenology and pathology of addiction. *Compr. Psychiatry*, 1963, *4*, 168–80.
8. Medical Society of the County of New York. The dangerous drug problem, *N.Y. Medicine*, 1966, *22* (*9*), 3–8.

B. *Barbiturates*

- *1. AMA Committee on Alcoholism and Drug Addiction (Dale Cameron, M.D., Chairman). Dependence on barbiturates and other sedative drugs. *JAMA*, 1965, *193* (*8*), 673–77.
- *2. Fort, J. The problem of barbiturates in the USA. *Bull. Narcotics*, 1964, *16* (*1*), 17–35.
- 3. Fraser, H. F. et al. Chronic barbiturate intoxication, further studies. *Arch. Intern. Med.*, 1954, *94*, 34–41.
- 4. Isbell, H. and Fraser, H. F. Addiction to analgesics and barbiturates. *Pharmacol. Rev.*, 1950, *2*, 355–97.
- *5. Seevers, M. H. Abuse of barbiturates and amphetamines. *Postgrad. Medicine*, 1965, *37* (*1*), 45–51.
- 6. Shideman, F. E. Clinical pharmacology of hypnotics and sedatives. *Clin. pharmacol. Ther.*, 1961, *2*, 313–44.
- 7. Smith, D. R. Drug intoxication: barbiturates and tranquilizers. *Applied Therapy*, 1964, *6* (*3*), 219–22.
- *8. Public Health Service Publ. No. 545 (Revised 1963). Barbiturates as addicting drugs.

C. *Amphetamines*

- 1. Breitner, C. Appetite-suppressing drugs as an etiologic factor and mental illness. *Psychosomatics*, 1963, *4*, 327–33.
- 2. Kiloh, L. G. and Brandon, S. Habituation and addiction to amphetamines. *Brit. Med. J.*, 1962, *II* (*5295*), 40–43.
- *3. Knapp, P. H. Amphetamine and addiction. *J. Nerv. Ment. Dis.*, 1952, *115* (*5*), 406–432.
- 4. Leake, C. W. *The Amphetamines.* Springfield, Ill.: C. C. Thomas, 1958.

---

[1] This bibliography represents only a few of the hundreds of references available. Articles and books have been selected to provide a basic introduction to and/or extensive bibliographies on various aspects of the problem. Starred (*) items comprise basic references.

5. McCormick, T. C., Jr. Toxic reactions to amphetamines. *Dis. Nerv. System*, 1962, *23*(*4*), 219–224.
*6. Seevers. M. H. Abuse of barbiturates and amphetamines. *Postgrad. Medicine*, 1965, *37*(*1*), 45–51.
7. Weiner, I. B. Differential diagnosis in amphetamine psychosis. *Psychiat. Quart.*, 1964, *38*(*4*), 707–716.

D. *Hallucinogens*

1. Barron, F. et al. The hallucinogenic drugs. *Scientific American*, 1964, *210*(*4*), 29–37.
2. Cohen, S. and Ditman, K. S. Complications associated with lysergic acid diethylamide (LSD–25). *JAMA*, 1962, *181*(*2*), 161–62.
3. Cohen, S. and Ditman, K. S. Prolonged adverse reactions to lysergic acid diethylamide. *Arch. Gen. Psychiat.*, 1963, *8*, 475–480.
4. Cohen, S. Suicide following morning glory seed ingestion. *Amer. J. Psychiat.*, 1964, *120*, 1024–1025.
*5. Cole, J. O. and Katz, M. M. The psychotomimetic drugs: An overview. *JAMA*, 1964, *187*(*10*), 758–761. (In Solomon, *LSD.*)
6. Frosch, W. A. et al. Untoward reactions to lysergic acid diethylamide (LSD) resulting in hospitalization. *New Eng. J. Med.*, 1965, *273*, 1235–1239.
*7. Hoffer, A. D-Lysergic acid diethylamide (LSD): A review of its present status. *Clin. pharm. Ther.*, 1965, *6*(*2*), 183–255.
8. Ingram, A. L. Morning glory seed reaction. *JAMA*, 1964, *190*(*13*), 1133–34.
9. Jacobson, E. The clinical pharmacology of the hallucinogens. *Clin. pharmacol. Ther.*, 1963, *4*(*4*), 480–503.
*10. Kleber, H. D. Student use of hallucinogens. *J. Amer. Coll. Health Assn.*, 1965, *14*, 109–117.
11. Klee, G. D. Lysergic acid diethylamide (LSD–25) and ego function *Arch. Gen. Psychiat.*, 1963, *8*(*5*), 461–474.
*12. Levine, J. and Ludwig, A. M. The LSD controversy. *Comprehensive Psychiatry*, 1964, *5*(*5*), 314–321.
*13. Ludwig, A. M. and Levine, J. Patterns of hallucinogenic drug abuse. *JAMA*, 1965, *191*(*2*), 92–96.
*14. Ludwig, A. M. and Levine, J. The clinical effects of psychedelic agents. *Clin. Med.*, 1966, *73*, 21–24.
*15. McGlothlin, W. H. Hallucinogenic drugs: A perspective. *Psychedelic Review*, 1965, *No. 6*, 16–57. (Peyote and Cannabis.)
*16. McGlothlin, W. H. and Cohen, S. The use of hallucinogenic drugs among college students. *Amer. J. Psychiat.*, 1965, *122*(*5*), 572–574.
17. Savage, C. and Stolaroff, M. Clarifying the confusion regarding LSD–25. *J. Nerv. Ment. Dis.*, 1965, *14*, 218–221.
18. Smith, J. P. LSD: The false illusion. *FDA Papers*, 1967, *1*, 10–18.
19. Sjoberg, B. M., Jr., and Hollister, L. E. The effects of psychotomimetic drugs on primary suggestibility. *Psychopharmacologia*, 1965, *8*(*4*) 251–262.
20. Unger, S. M. Mescaline, LSD, psilocybin and personality change. *Psychiatry*, 1963, *26*(*2*), 111–125. (In Solomon, *LSD.*)
21. Wolstenholme, G. E. W. and Knight, J., eds. *Hashish: Its Chemistry and Pharmacology.* Ciba Foundation Study, Group No. 21 Boston: Little, Brown, 1965.

IV. General Pharmacology

Goodman, L. and Gilman, A. *The Pharmacological Basis of Therapeutics.* New York: MacMillan, 1965 (3d Edition).

NASPA DRUG EDUCATION PROJECT

Background Papers—Series I (1966–67)

(1)	HELEN H. NOWLIS	Communicating about drugs
(2)	PAUL PUMPIAN	The FDA and drug abuse
(3)	DONALD MILLER	Narcotic drug and marihuana controls
(4)	LEO ABOOD	The biochemistry of psychoactive drugs
(5)	JOEL FORT	The semantics and logic of the drug scene
(6)	RICHARD BLUM	Nature and extent of the drug problem
(7)	EDGAR BORGATTA	Some problems in the study of drug use among college students
(8)	JEROME LEVINE	Roundtable on LSD
(9)	RICHARD ALPERT	Roundtable on LSD
(10)	WILLIAM McGLOTHLIN	Toward a rational view of hallucinogenic drugs
(11)	KENNETH KENISTON	Drug use and student values
(12)	RICHARD BLUM	Drugs and personal values
(13)	JOEL FORT	Social values, American youth, and drug use
(14)	NASPA	Bibliography; glossary; jargon
(15)	FDA	Depressant and stimulant drugs
(16)	EDDY ET AL.	Drug dependence: Its significance and characteristics (reprint—Bulletin World Health Organization, 1965, *32*, 721–731)
(17)	JOEL FORT	Comparison Chart of Major Substances Used for Mind Alteration

FILMS

The following films are suitable for college students. All are technically good. They vary in emphasis and impact. All are certain to raise questions. It is strongly urged that any films be previewed before showing to determine suitability for the audience intended, and that provisions be made for discussion led by a knowledgeable person or persons.

The Mind-Benders

Through contemporary cinematography, sound and color, *The Mind-Benders* explores the potential therapeutic uses and the known hazards of LSD and other hallucinogens, as well as some of the motivations of abusers. Medical authorities and users of the drugs appear in this documentary.

Twenty-six and one-half minutes; 16-mm., black, white, and color, cleared for television.

Available from Bureau of Drug Abuse Control field offices and from National Medical Audiovisual Center (Annex), Chamblee, Ga. 30005, Attention: Distribution.

LSD: Insight or Insanity

Presents user's reactions to LSD, pointing up the dangers of unsupervised use. Explains what is known about LSD's physiological and psychological effects. It will not be considered unbiased by some. 18 minutes; 16-mm.; sound-color.

Available from Bureau of Drug Abuse Control field offices and from Bailey Films, Inc., 6509 DeLongpre Avenue, Hollywood, Calif. 90028. Purchase $200, Rental (3-day) $15.

LSD–25

Documentary designed to convey the facts about LSD to the growing audiences concerned about the "drug scene" and its impact on youth. 27 minutes; 16-mm.; sound-color.

Available from Bureau of Drug Abuse Control field offices and from Professional Arts, Inc., Post Office Box 8484, Universal City, Calif. 91608.

The Seekers

A documentary in which young people talk to young people about the reasons for using drugs and the results of drug use. 31 minutes; 16-mm.; sound-color.

Available from New York State Narcotic Addiction Control Commission, Executive Plaza South, Stuyvesant Plaza, Albany, N.Y. 12203.

Rental free to institutions in New York. For information regarding purchase or rental outside write above address.

Leary-Cohen Debate

A free-swinging debate between Timothy Leary and Sidney Cohen videotaped live at a University of Oregon drug program. 90 minutes; Ampex V.T.R. 660–2-inch helical scan videotape; black and white; rental $15 from Broadcast Services, University of Oregon, Eugene, Oreg. 97403.

BUREAU OF DRUG ABUSE CONTROL

FOOD AND DRUG ADMINISTRATION

200 C Street SW., Washington, D.C. 20204

Atlanta Field Office

1831 Peachtree Road NE.
Atlanta, Ga. 30309
404-526-3111
Alabama, Florida, Georgia, Mississippi, South Carolina, Tennessee

Baltimore Field Office

401 Water Street
Baltimore, Md. 21202
301-962-4800
District of Columbia, Kentucky, Maryland, North Carolina, Virginia, West Virginia

Boston Field Office

John F. Kennedy Building
Room E-311
Boston, Mass. 02203
617-223-6632
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont

Chicago Field Office

205 West Wacker Drive
Suite 1700, Engineering Building
Chicago, Ill. 60606
312-353-5850
Illinois, Indiana, Michigan, Ohio, Wisconsin

Dallas Field Office

1114 Commerce Street
Room 723
Dallas, Tex. 75202
214-749-3631
Arkansas, Louisiana, Oklahoma, New Mexico, Texas

Denver Field Office

Room 228, New Customhouse
721 19th Street
Denver, Colo. 80202
303-297-4291
Colorado, Idaho, Montana, Utah, Wyoming

Kansas City Field Office

Room 225, U.S. Courthouse
811 Grand Avenue
Kansas City, Mo. 64106
816-374-5604
Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota

Los Angeles Field Office

714 West Olympic Boulevard
Suite 1010, Petroleum Building
Los Angeles, Calif. 90015
213-688-2650
Alaska, Arizona, California, Hawaii, Nevada, Oregon, Washington

New York Field Office

201 Varick Street
Room 1051-A
New York, N.Y. 10014
212-620-3334
Delaware, New Jersey, New York, Pennsylvania, Puerto Rico, Virgin Islands

BUREAU OF NARCOTICS

U.S. Treasury Department, Washington, D.C. 20226

District 1

1425 Post Office and Courthouse Building
Boston, Mass. 02109
617-223-2757 or 2758
Maine, New Hampshire, Vermont, Rhode Island, Massachusetts, and Connecticut

District 2

90 Church Street, Suite 605
New York, N.Y. 10007
212-264-7187 or 7188
New York State and the Newark District of New Jersey

District 3

605 U.S. Customhouse
Philadelphia, Pa. 19106
215-597-4310 or 4311
Pennsylvania, Delaware, and Camden District of New Jersey

District 5

103 South Gay Street
Room 301
Baltimore, Md. 21202
301-752-8460, Extensions 2178, 2179, 2180
Maryland, District of Columbia, North Carolina, Virginia, and West Virginia

District 6

1056 Federal Office Building
Atlanta, Ga. 30303
404-526-6085 and 6086
Georgia, Florida, Alabama, South Carolina, and Tennessee

District 8

602 Federal Building
Detroit, Mich. 48226
313-226-6110
Michigan, Kentucky, and Ohio

District 9

1836 U.S. Courthouse
Federal Office Building
Chicago, Ill. 60604
312-828-5810
Illinois, Indiana, and Wisconsin

District 10

1114 Commerce Street
Dallas, Tex. 75202
214-749-2827, 2828, 2829
Texas, Louisiana, and Mississippi

District 11

1502 Federal Office Building
Kansas City, Mo. 64106
816-374-5631—5632
Missouri, Kansas, Arkansas, and Oklahoma

District 12

402 Federal Building
Minneapolis, Minn. 55401
612-334-2323, 2324
Minnesota, Iowa, Nebraska, North Dakota, and South Dakota

District 13

106 U.S. Customhouse
Denver, Colo. 80202
303-297-4304, 4305
Colorado, Utah, Wyoming, and New Mexico

District 14

450 Golden Gate Avenue
San Francisco, Calif. 94102
415-556-6771, 6772, 6773
California, Nevada, and Arizona

District 15

311 U.S. Courthouse
Seattle, Wash. 98104
206-583-5443, 5444
Washington, Oregon, Idaho, Montana, Alaska, and Hawaii

NATIONAL INSTITUTE OF MENTAL HEALTH

Barlow Building, Chevy Chase, Md. 20015

Region I, Boston, Mass.

John F. Kennedy Federal Building
Boston, Mass. 02203
617-223-6824
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont

Region II, New York, N.Y.

Room 1200, 42 Broadway
New York, N.Y. 10004
212-264-2567
Delaware, New Jersey, New York, Pennsylvania

Region III, Charlottesville, Va.

220 Seventh Street NE.
Charlottesville, Va. 22901
703-296-5171, Extension 278/253/420
District of Columbia, Kentucky, Maryland, Puerto Rico, North Carolina, Virgin Islands, Virginia, West Virginia

Region IV, Atlanta, Ga.

Room 404, 50 Seventh Street NE.
Atlanta, Ga. 30323
404-526-5231
Alabama, Florida, Georgia, Mississippi, South Carolina, Tennessee

Region V, Chicago, Ill.

Room 712, New Post Office Building
433 West Van Buren Street
Chicago, Ill. 60607
312-828-5228
Illinois, Indiana, Michigan, Ohio, Wisconsin

Region VI, Kansas City, Mo.

601 East 12th Street
Kansas City, Mo. 64106
816-374-3791
Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota

Region VII, Dallas, Tex.

1114 Commerce Street
Dallas, Tex. 75202
214-749-3426
Arkansas, Louisiana, New Mexico, Oklahoma, Texas

Region VIII, Denver, Colo.

Room 9017, Federal Office Building
19th and Stout Streets
Denver, Colo. 80202
303-297-3177
Colorado, Idaho, Montana, Utah, Wyoming

Region IX, San Francisco, Calif.

Federal Office Building
50 Fulton Street
San Francisco, Calif. 94102
415-556-2215
Alaska, Arizona, California, Guam, Hawaii, Nevada, Oregon, Washington, American Samoa, Wake Island

BUREAU OF NARCOTICS

U.S. Treasury Department, Washington, D.C. 20226

District 1

1425 Post Office and Courthouse Building
Boston, Mass. 02109
617-223-2757 or 2758
Maine, New Hampshire, Vermont, Rhode Island, Massachusetts, and Connecticut

District 2

90 Church Street, Suite 605
New York, N.Y. 10007
212-264-7187 or 7188
New York State and the Newark District of New Jersey

District 3

605 U.S. Customhouse
Philadelphia, Pa. 19106
215-597-4310 or 4311
Pennsylvania, Delaware, and Camden District of New Jersey

District 5

103 South Gay Street
Room 301
Baltimore, Md. 21202
301-752-8460, Extensions 2178, 2179, 2180
Maryland, District of Columbia, North Carolina, Virginia, and West Virginia

District 6

1056 Federal Office Building
Atlanta, Ga. 30303
404-526-6085 and 6086
Georgia, Florida, Alabama, South Carolina, and Tennessee

District 8

602 Federal Building
Detroit, Mich. 48226
313-226-6110
Michigan, Kentucky, and Ohio

District 9

1836 U.S. Courthouse
Federal Office Building
Chicago, Ill. 60604
312-828-5810
Illinois, Indiana, and Wisconsin

District 10

1114 Commerce Street
Dallas, Tex. 75202
214-749-2827, 2828, 2829
Texas, Louisiana, and Mississippi

District 11

1502 Federal Office Building
Kansas City, Mo. 64106
816-374-5631—5632
Missouri, Kansas, Arkansas, and Oklahoma

District 12

402 Federal Building
Minneapolis, Minn. 55401
612-334-2323, 2324
Minnesota, Iowa, Nebraska, North Dakota, and South Dakota

District 13

106 U.S. Customhouse
Denver, Colo. 80202
303-297-4304, 4305
Colorado, Utah, Wyoming, and New Mexico

District 14

450 Golden Gate Avenue
San Francisco, Calif. 94102
415-556-6771, 6772, 6773
California, Nevada, and Arizona

District 15

311 U.S. Courthouse
Seattle, Wash. 98104
206-583-5443, 5444
Washington, Oregon, Idaho, Montana, Alaska, and Hawaii

Order Form

President's Commission on Law Enforcement and Administration of Justice

_____Task Force Report: Narcotics and Drug Abuse $1.00

Name____

Address____

____
City/State/Zip Code

(Enclose check, money order, or Superintendent of Documents coupons)
Mail to: Superintendent of Documents, Government Printing Office,
Washington, D.C. 20402

Order Form

_____Copies NASPA Drug Education Project Background Papers
(mimeo) (Single sets free; additional sets $1.00)
_____Copies "Drugs on the College Campus."
(Single copy free; additional copies $1.00 each)

Name____

Address____

____
City/State/Zip Code

Mail to: NASPA Drug Education Project, 110 Anderson Tower,
University of Rochester, Rochester, N.Y. 14627

_____I would like to be on the NASPA Drug Education Project mailing list

I would be particularly interested in materials or
references on the following specific topics:

____

____

Name____

Address____

____
City/State/Zip Code

Mail to: NASPA Drug Education Project, 110 Anderson Tower,
University of Rochester, Rochester, N.Y. 14627